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April 13, 2017

Mr. Mr. Rusty Kestle
Remedial Project Manager
U.S. Environmental Protection Agency
Region IV, Superfund North Florida Section
61 Forsyth Street, SW
Atlanta, GA 30303-3104

RE: Transmittal of Report "Phase I Results for the Former South Lagoon Preliminary Design and Design Investigation Workplan Implementation"

Dear Mr. Kestle:

On behalf of Beazer East, Inc., attached is a preliminary report for the 2016 dense non-aqueous phase liquid (DNAPL) investigation performed at the former South Lagoon, Cabot Carbon / Koppers Inc. Site, Gainesville, Florida. The Phase I investigation was performed as detailed in the approved March 22, 2016 workplan titled: "*Former South Lagoon Preliminary Design and Design Investigation Workplan, Former Cabot Carbon / Koppers Inc. Site, Gainesville, Florida*".

Included with this preliminary report are recommendations for additional supplemental borings and TIPs/wells to complete the characterization of the former South Lagoon area. A total of 23 additional borings are proposed to supplement the 45 borings and 25 TIPs/wells installed as part of the Phase I investigation.

Should you require additional information, please feel free to contact me at (303) 665-4390.

Sincerely,

James R. Erickson
Vice President
Principal Hydrogeologist

Enclosure
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Phase I Results for the Former South Lagoon Preliminary Design and Design Investigation Workplan Implementation, Former Cabot Carbon/Koppers Inc. Site Gainesville, Florida

Version 0
Operable Units Two and Three (Koppers)
Gainesville, Florida
EPA ID: FLD980709356

Version 0
April 13, 2017

Prepared on behalf of Beazer East, Inc.

TETRA TECH

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ABBREVIATIONS AND ACRONYMS

Beazer	Beazer East, Inc.
bgs	Below Ground Surface
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	Environmental Protection Agency
EVS©	Environmental Visualization System
HG	Hawthorn Group
ISGS	*In-Situ* Geochemical Stabilization
ROD	Record of Decision
Site	Koppers portion of the Cabot Carbon/Koppers Superfund Site
TIP	Temporary Investigation Point
TOC	Top of Casing
UH	Upper Hawthorn

1.0 INTRODUCTION

This preliminary report provides a brief discussion of the 2016 dense non-aqueous phase liquid (DNAPL) investigation performed at the former South Lagoon, Cabot Carbon / Koppers Inc. Site, Gainesville, Florida. The Phase I investigation was performed as detailed in the approved March 22, 2016 workplan titled: "*Former South Lagoon Preliminary Design and Design Investigation Workplan, Former Cabot Carbon / Koppers Inc. Site, Gainesville, Florida*" (2016 Workplan). The objective of this investigation was to characterize vertical and lateral extent of DNAPL impacts in the former South Lagoon area in order to support full-scale implementation for *in-situ* geochemical stabilization (ISGS). The ISGS remedy will be implemented in both the Surficial Aquifer and Upper Hawthorn (UH) unit of the former South Lagoon area of the Koppers portion of the Cabot Carbon/Koppers Superfund Site (the Site[1]) in Gainesville, Florida. ISGS treatment for the former South Lagoon is part of the remedial plan for the Site, as described in the February 2011 Record of Decision (ROD) published by the United States Environmental Protection Agency (EPA). A Consent Decree between Beazer East Inc. (Beazer) and the United States government was entered in the United States District Court for the Northern District of Florida on July 9, 2013. The Consent Decree requires Beazer to conduct certain Remedial Design and Remedial Action activities at the Site, including the ISGS technology discussed in this report.

The this report provides the preliminary results of the investigation work performed in the former South Lagoon area in November 2016. In addition, supplemental borings and select temporary investigation points (TIPs)/wells are proposed to complete the former South Lagoon characterization in order to focus the ISGS remediation on DNAPL-impacted zones.

[1] In this document "Site" refers to the Koppers portion of the Cabot-Carbon/Koppers Superfund Site, unless otherwise noted. The Site property is now owned by Beazer East, Inc.

2.0 SOUTH LAGOON PHASE I INVESTIGATION

The 2016 Workplan detailed the installation of 40 borings and 25 TIPs for the preliminary investigation of DNAPL impacts in the former South Lagoon area. The 2016 Workplan designated the locations of the first 25 borings and left the remaining 15 boring locations to be field located based on results from the first 25 borings. The objective of the first 25 borings was to establish the approximate lateral and vertical extent of DNAPL impacts across the former South Lagoon footprint. These borings were prescribed in the 2016 Workplan to extend from land surface to the HG middle clay unit at an approximate depth of 65 to 70 feet below ground surface (bgs).

The second part of the Phase I investigation consisted of locating and installing 15 additional borings to supplement the first 25 borings and to better refine the lateral/vertical distribution of DNAPL impacts. The first 25 borings installed demonstrated that the majority of the DNAPL impacts were in a zone from approximately 5 to 35 feet bgs and did not extend to the top of the HG middle clay unit. Because of the limited vertical extent, Beazer requested and was granted permission from the EPA to limit the depths of the 15 supplemental borings to approximately 35 to 40 feet bgs.

Based on the results of the boring investigation, borings with potentially free-phase DNAPL (DNAPL ratings of 4 and 5) were completed as TIPs/wells. The TIPs/wells will be utilized for pre- and post-ISGS performance monitoring.

2.1 SURVEYING BORING LOCATIONS AND LOCATING SUBSURFACE STRUCTURES

Preliminary boring locations were established by surveying the corner points of a grid established to locate borings and setting temporary stakes along the perimeter of the grid. In addition, the initial 25 boring locations were surveyed to establish accurate locations and to provide additional surveyed locations to more accurately locate the remaining borings. The remaining boring locations were established by measuring distances from the survey lines and/or surveyed borings with a tape measure. All TIP/well and the majority of the boring locations were surveyed at the completion of the Phase I investigation.

A utility locate service was contracted to clear all potential boring locations prior to drilling operations. No subsurface structures were identified within 10 feet of the proposed boring locations.

2.2 BORING INSTALLATION

Core samples were collected in Surficial and Hawthorn Group (HG) deposits using a rotasonic rig to provide detailed characterization of DNAPL impacts. Relative DNAPL impacts were evaluated using the same numerical rating used in the former Process Area characterization. Relative DNAPL impacts were evaluated using the following numerical rating from 1 to 5:

1 -- "DNAPL not observed" – no evidence, such as staining or liquid DNAPL, is observed in the core. Low PID readings possible;

2 -- "Elevated PID measurements observed" – PID measurements taken from the core are elevated above baseline values; often accompanied by creosote-like odors;

3 -- "Limited residual DNAPL Staining observed" – the sediments are discolored consistent with contact with DNAPL; staining is often accompanied by creosote-like odors;

4 -- "Heavy residual DNAPL Staining observed" – minimal or no staining on core sleeve; and

5 -- "DNAPL present above residual saturation" – DNAPL flows freely from the core material.

Boring installations were performed in a phased approach to better focus the characterization in areas of impacts and to reduce the number of unnecessary borings. Initially, 25 boring were installed across the former South Lagoon area to delineate DNAPL impacts horizontally and vertically from land surface to the top of the HG middle clay unit. All of the initial 25 borings extended from land surface to the top of the HG middle clay unit at a depth of approximately 65 to 70 ft bgs. Continuous core samples were collected from approximately 5 ft below land surface to the top of the HG middle clay unit. Results of these borings demonstrated that DNAPL impacts typically did not extend below a depth of approximately 35 ft bgs.

After performing the preliminary Environmental Visualization System© (EVS©) model evaluation utilizing the initial 25 borings, additional borings were located and installed to augment the characterization of DNAPL impacts in the former South Lagoon (**Figure 1**). The approved 2016 Workplan specified 15 augmentation borings would be installed; however, an additional five borings were installed to better delineate DNAPL impacts. The 20 augmentation borings were only installed to the observed base of DNAPL impacts from the initial 25 borings, typically less than 35 feet bgs, as per EPA's approved

revision to the workplan. Boring and TIP/well survey locations and ground surface elevations are provided in **Table 1**.

2.3 TEMPORARY INVESTIGATION POINT/WELL INSTALLATION

A total of 25 TIPs/wells were installed at locations and depth intervals with the greatest DNAPL impacts and which were most likely to yield recoverable DNAPL. The actual TIP/well completion depths and screened intervals were based on observed DNAPL impacts in the boring core. In general, DNAPL impacts extended from approximately 10 to 35 ft bgs; hence the majority of the TIPs/wells were completed above an approximate depth of 35ft bgs. The only exception was in the eastern area of the former South Lagoon investigation area where two borings encountered DNAPL impacts above the HG middle clay unit from approximately 50 to 62 ft bgs. Two TIPs/wells were completed in these borings.

Fifteen of the TIPs/wells were offset approximately 5 ft from original boring locations. The drillers expressed concern with backfilling up to 40 ft of a 65 to 70 ft deep boring in order to complete a TIP/well at a shallower depth. In order to avoid constructing a well in a boring filled with significant bentonite grout in the bottom, it was decided to abandon the investigaiton boring and install a shallower well adjacent to the boring. The shallower completion depths (approximately 35 ft bgs) for the 20 augmentation borings allowed for 10 of the 25 TIPs/wells to be completed in the investigation borehole. The TIP/well surveyed top of casing (TOC) and construction/completion information are provided in **Table 2**.

A total of 13 TIPs/wells were completed in the Surficial Aquifer and 12 TIPs/wells were completed in the UH (**Figure 2**).

Borings not completed with a TIP/well were abandoned by backfilling with a cement-bentonite grout mixture (6.5 gallons per 94 lb sack of cement with 3 to 5 percent bentonite). The grout mixture was placed starting at the bottom of the boring using a tremie pipe.

2.4 WATER-LEVEL MONITORING

Water-level and DNAPL thickness monitoring were initiated in the TIPs/wells in January 2017. The results of the water-level monitoring confirm the localized groundwater flow direction for the former South Lagoon area is to the northeast (**Figure 3**). This groundwater flow direction is consistent with the annual monitoring reports, potentiometric surface maps and the 2004 calibrated model for the Site (GeoTrans, 2004).

The groundwater flow direction for the former South Lagoon is consistent with the flow direction at the former Process Area. The January 2017 water-level data from the former South Lagoon and Process Area TIPs/wells were contoured to evaluate groundwater flow for the southern area of the Site (**Figure 4**). The data from both areas are consistent and show a northeasterly groundwater flow direction for the southern half of the Site. The most recent water-level data from the former South Lagoon area are in agreement with the former Process area potentiometric surface and average groundwater flow direction.

2.5 EVS© MODEL DNAPL EVALUATION

The 3-dimensional distribution of DNAPL in both the Surficial Aquifer and the UH were evaluated using the Environmental Visualization System (EVS©) software by C Tech Development Corporation. The DNAPL relative saturations were entered into the EVS© model based on the numerical ratings scale described in the 2016 Workplan and in Section 2.2 of this report.

Figure 5 shows the EVS model projected Surficial Aquifer and HG DNAPL distribution for the former South Lagoon area. Although the footprint of the DNAPL distribution appears to be laterally extensive across the entire former South Lagoon area, the DNAPL characterization reveals it is restricted to thin horizontal seams at multiple discrete depths.

A better depiction of the relatively thin DNAPL seams is shown in cross-sections A-A' to D-D'. Cross-section A-A' extends from north to south through the center of the former South Lagoon area (**Figure 6A**). This cross-section shows that he majority of the DNAPL is restricted to the Surficial Aquifer and HG upper clay unit. Only a small amount of the DNAPL is present immediately below the HG upper clay unit.

Cross-section B-B' extends from west to east across the northern portion of the former South Lagoon (**Figure 6B**). Similarly, the majority of the DNAPL impacts are in the Surficial Aquifer and HG upper clay unit.

Cross-section C-C' ((**Figure 6C**) extends from west to east and is located approximately 80 ft to the south of cross-section B-B'. Similar to the previous cross-sections the majority of the DNAPL impacts are in the Surficial Aquifer and HG upper clay unit. The only exception is in the eastern most boring (SL 460N 380E) where DNAPL impacts are relatively absent in the shallow deposits, but present in the UH above the HG middle clay unit.

Cross-section D-D' is located in the southern portion of the former South Lagoon and extends west to east across the center of the DNAPL footprint (**Figure 6D**). Virtually all of the DNAPL impacts for this area are located in the Surficial Aquifer, with the majority

of the impacts present above a depth of 10 ft bgs. The shallow depths of these impacts would correspond with an average historical wastewater pond depth for the Site and may represent residual impacts present in the ponds when they were closed.

2.6 DNAPL MONITORING AND RECOVERY

Free-phase DNAPL has been detected in six of the 25 TIPs/wells installed in the former South Lagoon. All six of the DNAPL TIPs/wells are completed in the UH and located in the northern portion of the former South Lagoon (**Figure 2**) area. No free-phase DNAPL has been detected in any of the TIPs/wells completed in the Surficial Aquifer; however, the DNAPL impacts logged for cores collected from the Surficial Aquifer appeared to be equivalent to the DNAPL-impacted cores collected from the HG deposits. The lack of recoverable DNAPL in the Surficial Aquifer may be an indication that DNAPL saturations for the Surficial aquifer are below residual saturation levels. The majority of the free-phase DNAPLs have drained into the HG upper clay unit and UH leaving behind residual concentrations of DNAPL in the Surficial Aquifer.

TIP/well DNAPL thicknesses were measured 2 days following the first DNAPL recovery event performed on January 17, 2017; DNAPL thicknesses ranged from 0.82 ft (SL 500N 180E) to 7.95 ft (SL 620N 220E). In general, the thickest accumulation of DNAPL in TIPs/wells is in the northernmost portion of the former South Lagoon area. The relatively rapid DNAPL recovery in TIPs/wells following the initial DNAPL removal is a potential indication that DNAPL seams are interconnected and DNAPL saturations are elevated in the northern portion of the former South Lagoon area.

DNAPL recovery from the former South Lagoon TIPs/wells started on January 17, 2017 and is being performed bi-weekly. DNAPL is being removed from the TIPs/wells via a peristaltic pump to minimize disturbance of the DNAPL/water column. The first DNAPL recovery event tends to produce a larger amount of DNAPL because there was a longer time period (approximately 2 months) for it to accumulate in the TIP/well. Subsequent recovery events are more representative of the average bi-weekly recovery rates because DNAPL is being removed from the TIPs/wells on a consistent basis.

The results of the DNAPL recovery for the first four events (1/17/17- 2/28/17) are shown in **Figure 5**. The DNAPL recovery volumes range from less than 1 gallon (SL 500N 180E) to more than 5 gallons (SL620 220E). The top three producing TIPs/wells (SL 620N 220E, SL 540N 260E and SL 580N 260E) are located in the northern most portion of the former South Lagoon area. Given that the TIPs/wells have only been installed from approximately 3 months, it is possible that additional TIPs/wells may have recoverable DNAPL in the next few months.

3.0 PROPOSED NEW SUPPLEMENTAL BORINGS

3.1 SUPPLEMENTAL BORINGS

Additional supplemental borings are being proposed to further delineate the lateral extent of DNAPL and to reduce EVS model uncertainty in areas with less data. A total of 23 new borings are proposed to finalize the characterization effort for the former South Lagoon area. The proposed 23 borings are superimposed on the Surficial Aquifer DNAPL footprint (**Figure 7**) and the UH DNAPL footprint (**Figure 8**) to show the locations of borings in relation to impacts for both of these units.

Shown on **Figure 7 and 8** are borings (blue boring symbol) around the periphery of the former South Lagoon footprint that had little to no DNAPL impacts. These borings demonstrate that the lateral extent of DNAPL impacts is well defined to the north, south and middle portions of the former South Lagoon footprint. However, there are a few locations in the western and eastern areas were the lateral extent of DNAPL impacts are not defined. Supplemental borings have been proposed in these locations to better define the extent of the DNAPL footprint for the Surficial and HG deposits.

The objective for the proposed supplemental borings are to: 1) Establish the lateral extent of the DNAPL-impacted footprint; and 2) Resolve interconnectivity of plume lobes within the DNAPL footprint. **Table 3** lists each of the proposed supplemental borings along with its projected depth and objective. Seventeen of the borings are projected to be installed to an approximate depth of 35 to 40 ft bgs. DNAPL impacts were encountered at a deeper depth (approximately 50 to 65 ft bgs) in the eastern portion of former South Lagoon area (SL 460N 380E and SL 500N 420E). Therefore, four supplemental borings proposed for this area will extend to the top of the HG middle clay unit (approximate depth bgs of 65 to 70 ft bgs). Similarly, there are two borings proposed to investigate Surficial Aquifer DNAPL impacts in the southern portion of the former South Lagoon area. It is anticipated that these borings will extend through the HG upper clay unit to a depth of approximately 25 to 30 ft bgs. All supplemental borings will extend approximately 5 ft below visual DNAPL staining impacts.

Six supplemental borings are currently designated for completion as TIPs/wells; however, the final decision to install a TIP/well will be dependent on DNAPL impacts (DNAPL ratings of 4 and 5) observed in the cores. The final number of TIPs/wells installed as part of this supplemental boring phase will be dependent on number of boring locations with potentially recoverable DNAPL.

Conversely, it is assumed that borings located around the edge of the DNAPL footprint will not be converted to TIPs/well, as it is unlikely that significant DNAPL impacts are present in these locations. However, all supplemental boring locations with potentially

recoverable DNAPL will be converted to a TIP/well, if it is established that field conditions are favorable for DNAPL recovery.

3.2 SCHEDULE

The schedule for installation of the supplemental borings will be dependent on regulatory approval and driller subcontractor availability. Beazer is ready to implement the supplemental investigation boring program once regulatory approval is obtained.

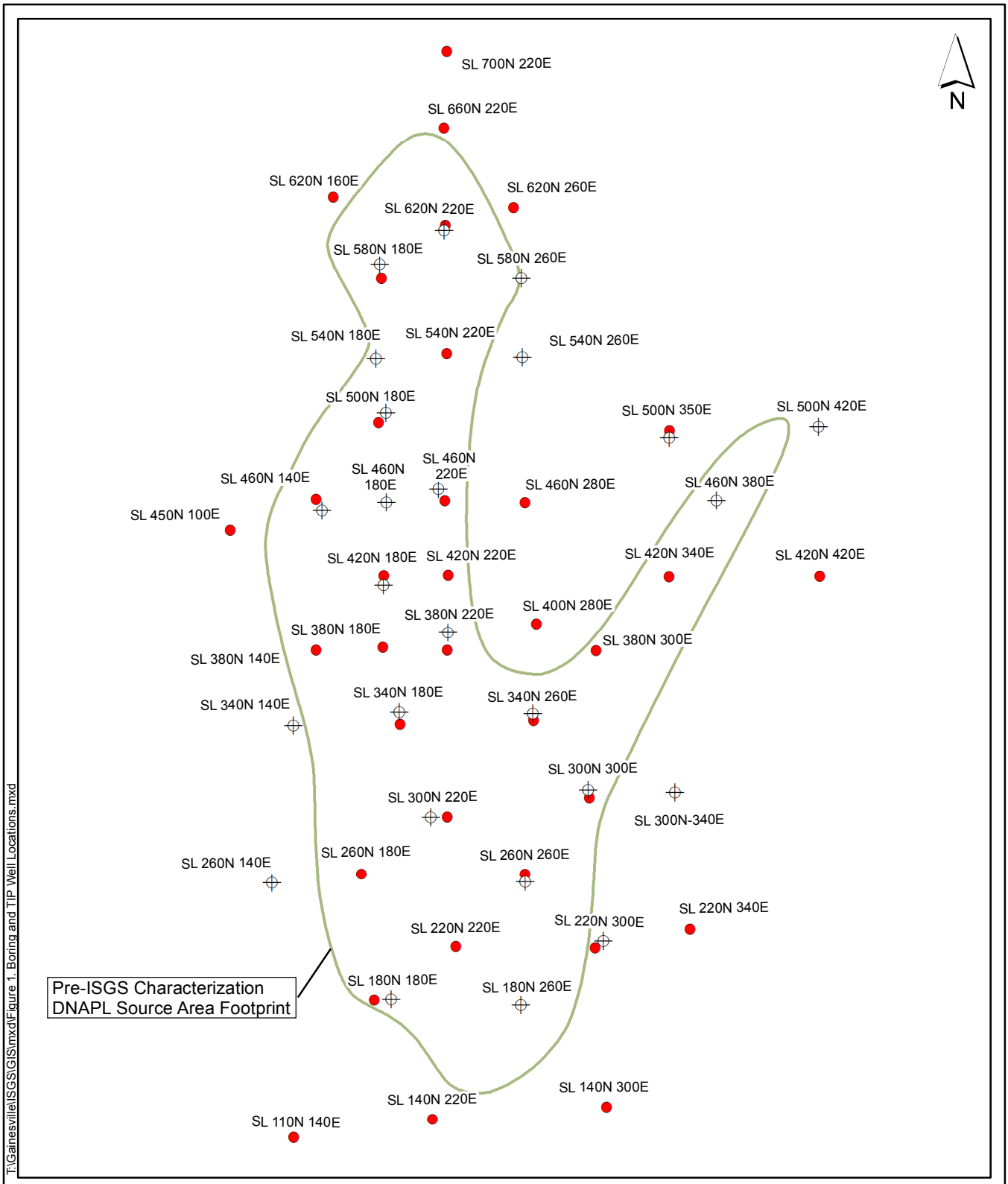
4.0 REFERENCES

GeoTrans, 2004. Addendum 7. Groundwater Flow and Transport Model, Draft Report, Koppers Inc. Site, Gainesville Florida, October 5, 2004.

Tetra Tech, 2016. Former South Lagoon Preliminary Design and Design Investigation Workplan, Former Cabot Carbon / Koppers Inc. Site, Gainesville, Florida, March 22, 2016.

U.S. EPA, 2011. Record of Decision, Summary of Remedial Alternative Selection, Cabot Carbon/Koppers Superfund Site, Gainesville, Alachua County, Florida, February 2011

FIGURES



T:\Gainesville\ISGS\GIS\mxd\Figure 1. Boring and TIP Well Locations.mxd

Explanation:

SL 180N 180E — As-Built TIP/Well

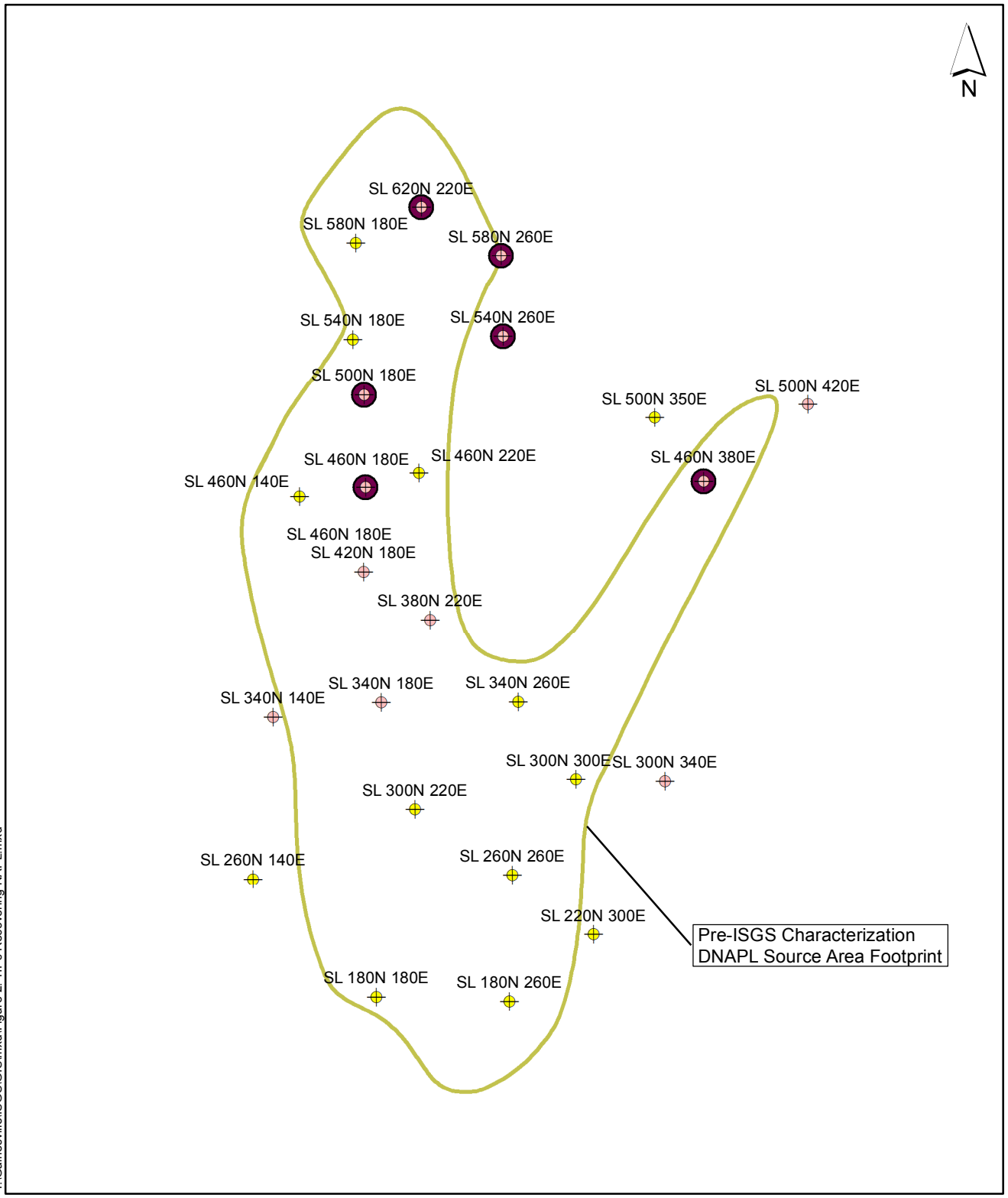
SL 180N 180E — As-Built Boring

TITLE:	South Lagoon Preliminary Investigation Boring and TIP/Well Locations
LOCATION:	Cabot Carbon/Koppers Superfund Site Gainesville, FL

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DRAFTED	MRI
PROJECT	117-2201398
DATE	04/04/2017

FIGURE: 1



T:\Gainesville\ISGS\GIS\mxd\Figure 2. TIPs Recovering NAPL.mxd

Explanation:

SL 500N 420E — Upper Hawthorn TIP/Well, No Recoverable DNAPL

SL 500N 420E — Surficial Aquifer TIP/Well, No Recoverable DNAPL

SL 500N 420E — TIP/Well with Recoverable DNAPL

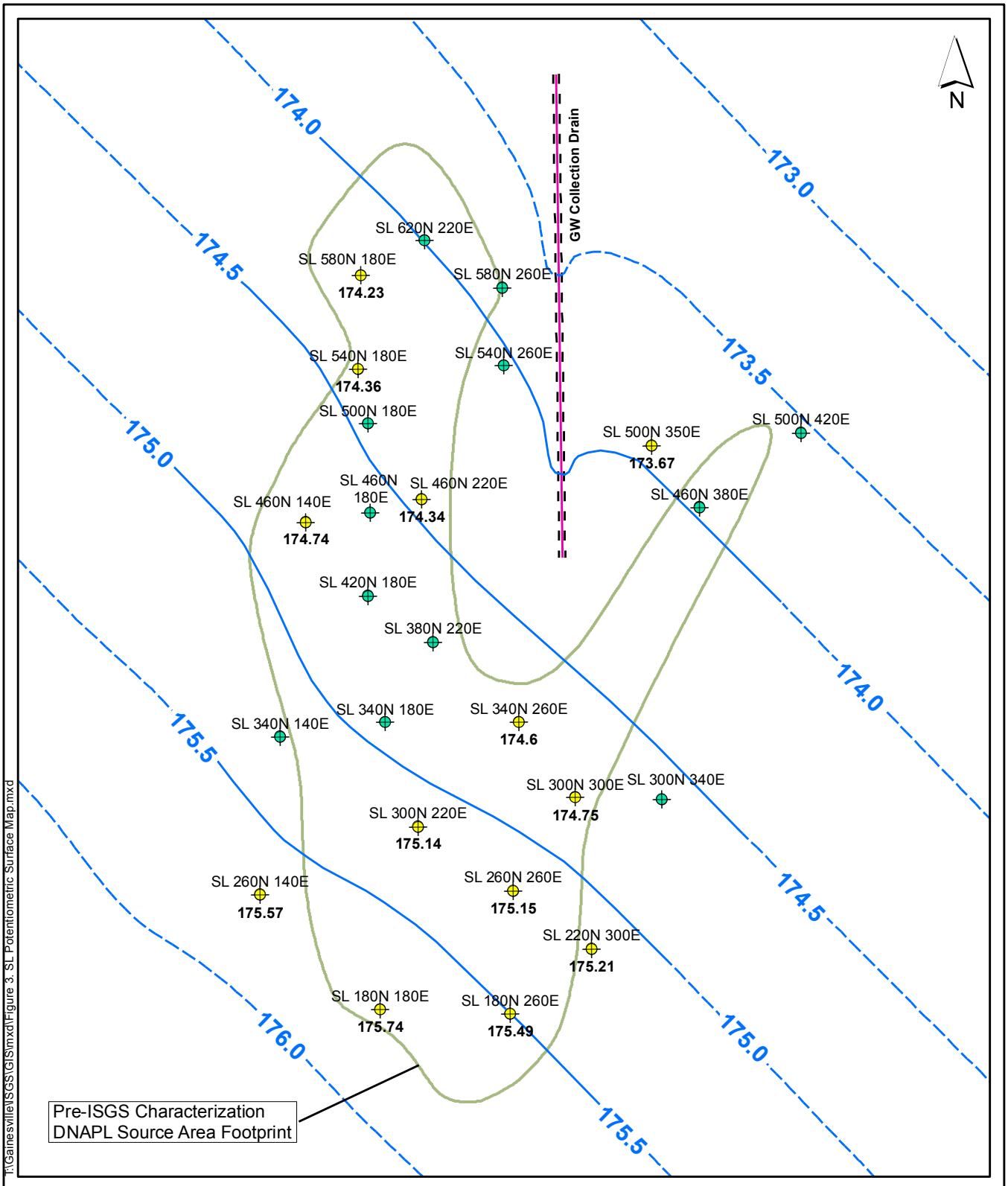
TITLE: South Lagoon Preliminary Investigation TIPs/Wells with DNAPL Recovery, January 2017

LOCATION: Cabot Carbon/Koppers Superfund Site Gainesville, FL

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DRAFTED	MRI
PROJECT	117-2201398
DATE	04/04/2017

FIGURE: 2



Explanation:

175.0 — Water Level Contour, dashed where approximated (ft amsl)

SL 500N 420E — Upper Hawthorn TIP/Well ID

SL 500N 420E
175.54 — Surficial Aquifer TIP/Well ID and Water-Level Elevation (ft amsl)

0 40 80 160 240 Feet

TITLE:	Surficial Aquifer Potentiometric Surface Former South Lagoon, January 5, 2017
LOCATION:	Cabot Carbon/Koppers Superfund Site Gainesville, FL

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DATE	04/04/2017

FIGURE: 3

Pre-ISGS Characterization DNAPL Source Area Footprint, Former South Lagoon

Pre-ISGS Characterization DNAPL Source Area Footprint, Former Process Area

N

174.0 173.5 173.0 172.5 172.0 171.5 171.0 174.5 175.5 175.0 176.0 174.5 174.0 173.5 173.0 172.5 172.0 171.5 175.0 174.0 173.5 173.0

173.82 173.67 173.98 174.38 174.44 174.54 174.53 174.72 174.86 173.43 173.78 174.49

172.12 172.03 171.25 171.54 172.63 172.33 172.22 172.86 172.92 173.05 172.78 172.57 172.42 172.1 173.93* 171.33 171.2 172.73 172.51 173.2 173.08 172.59 171.76 171.31 172.39 172.68 173.32 172.56 171.51 172.99 175.5* 171.65 172.85 172.703 171.36* 171.81 173.01 173.61 173.57 173.316 173.052* 172.81 172.578 173.73 173.64 173.32 172.989 174.267* 172.125 173.926 173.809 173.651 173.472 172.719 173.186 174.027 173.95 173.745 173.604 172.944 173.161 173.022 173.299 172.883 172.442 173.551

Explanation:

175.0	Water-Level Contour, dashed where approximated (ft amsl)
174.44	Upper Hawthorn TIP/Well and Water-Level Elevation (ft amsl)
	Surficial Aquifer TIP/Well
173.93*	Water Level not used to generate potentiometric surface contours

T:\Gainesville\SGS\GIS\mxd\Figure 4. SL PA Potentiometric Surface Map 2017.mxd

TIP/Well coordinates in NAD 1983, 2011 Florida State Plane North, FIPS 0903, Lambert Conformal Conic. Survey and water- level elevations in NAVD88.

Scale: 0 20 40 80 120 160 Feet

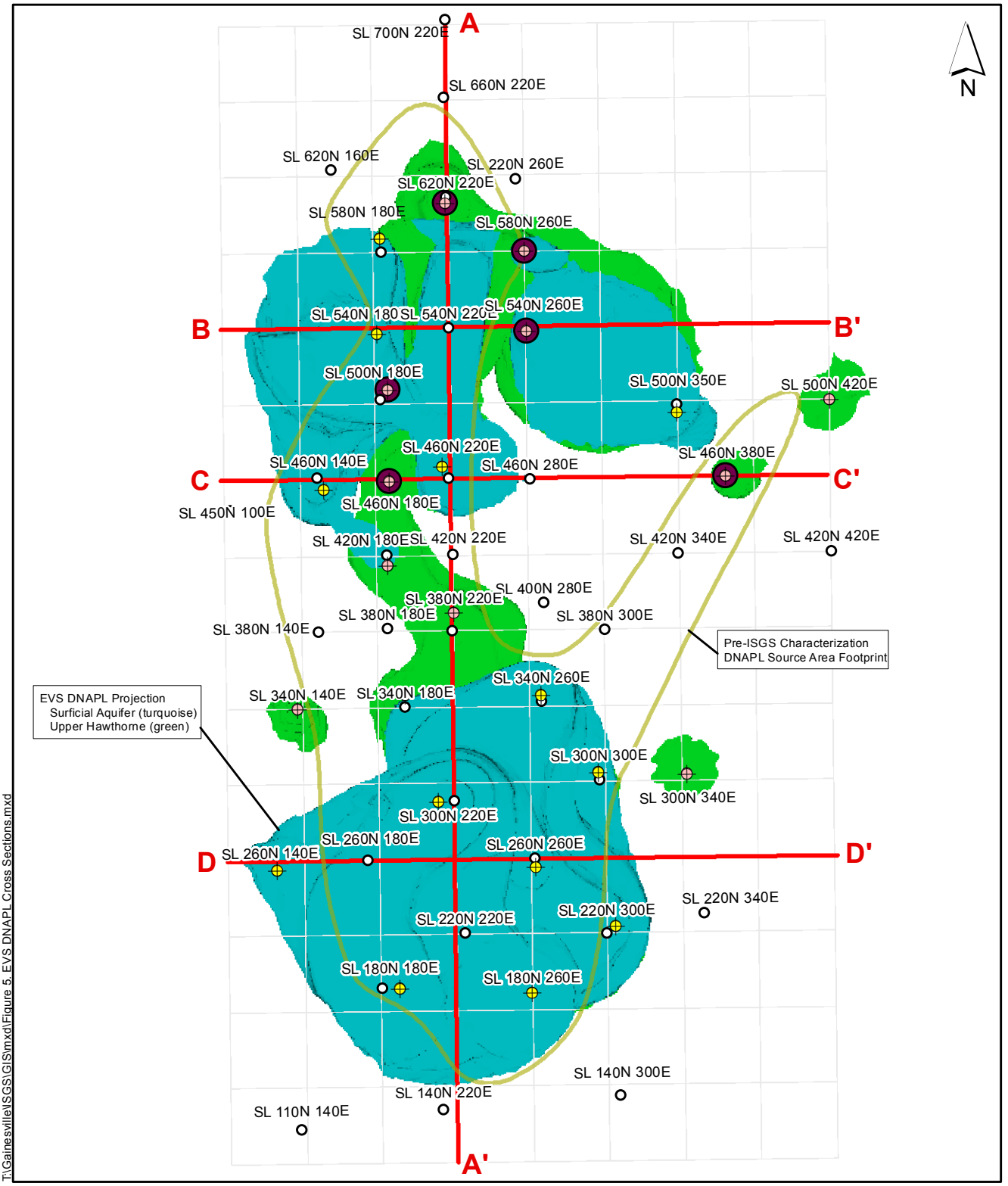
Title: **Upper Hawthorn Potentiometric Surface Former South Lagoon and Process Area January 2017**

Location: Cabot Carbon/Koppers Superfund Site Gainesville, Florida

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PROJCET	117-2201365
DATE	04/04/2017

FIGURE: 4



T:\Gainesville\ISGS\GIS\mxd\Figure 5_EVS DNAPL Cross Sections.mxd

Explanation:

SL 500N 420E — Investigation Boring with ID

A — A' Cross Section

SL 500N 420E — TIP/Wells with recoverable DNAPL

SL 500N 420E — TIP/Well Location with no recoverable DNAPL
Surficial Aquifer (yellow)
Upper Hawthorn (pink)

0 40 80 160 240 Feet

TITLE: DNAPL Projections and Cross-Section Locations
South Lagoon

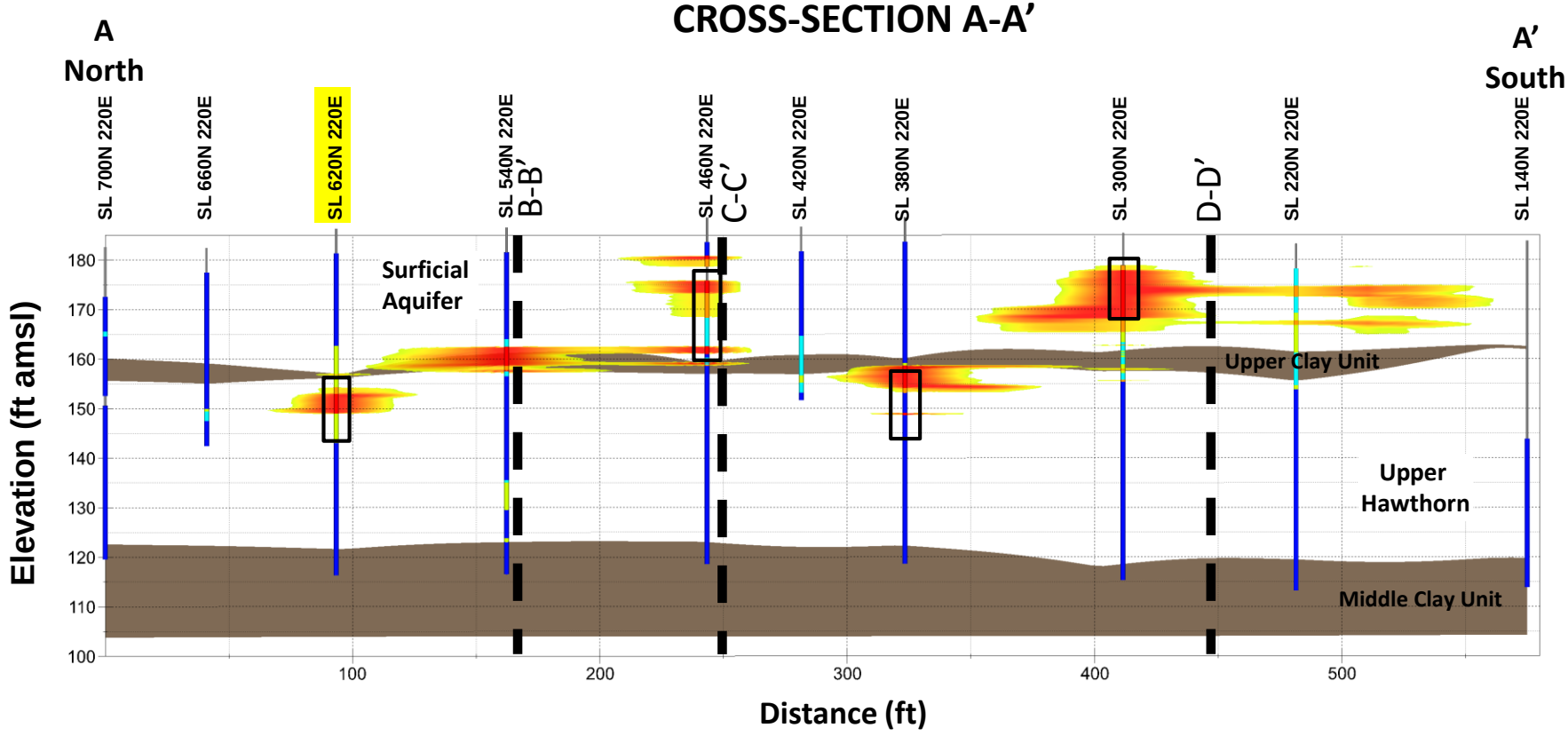
LOCATION: Cabot Carbon/Koppers Superfund Site
Gainesville, FL

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PROJECT	117-2201398
DATE	04/04/2017

FIGURE: 5

CROSS-SECTION A-A’



Vertical Exaggeration 1.5:1

Explanation:

TIP/Well Screen and Filter Pack Interval

SL 260N 180E — TIP/Well Recovering DNAPL

B-B’ — Perpendicular Cross Section

NAPL Category
5 - Visible Mobile NAPL
4 - Heavy Staining
3 - Light Staining
2 - Elevated PID
1 - No NAPL

TITLE: **CROSS-SECTION A-A’ with TIPs/Wells Recovering DNAPL**

LOCATION: **Former South Lagoon, Cabot Carbon/Koppers Superfund Site, Gainesville FL**

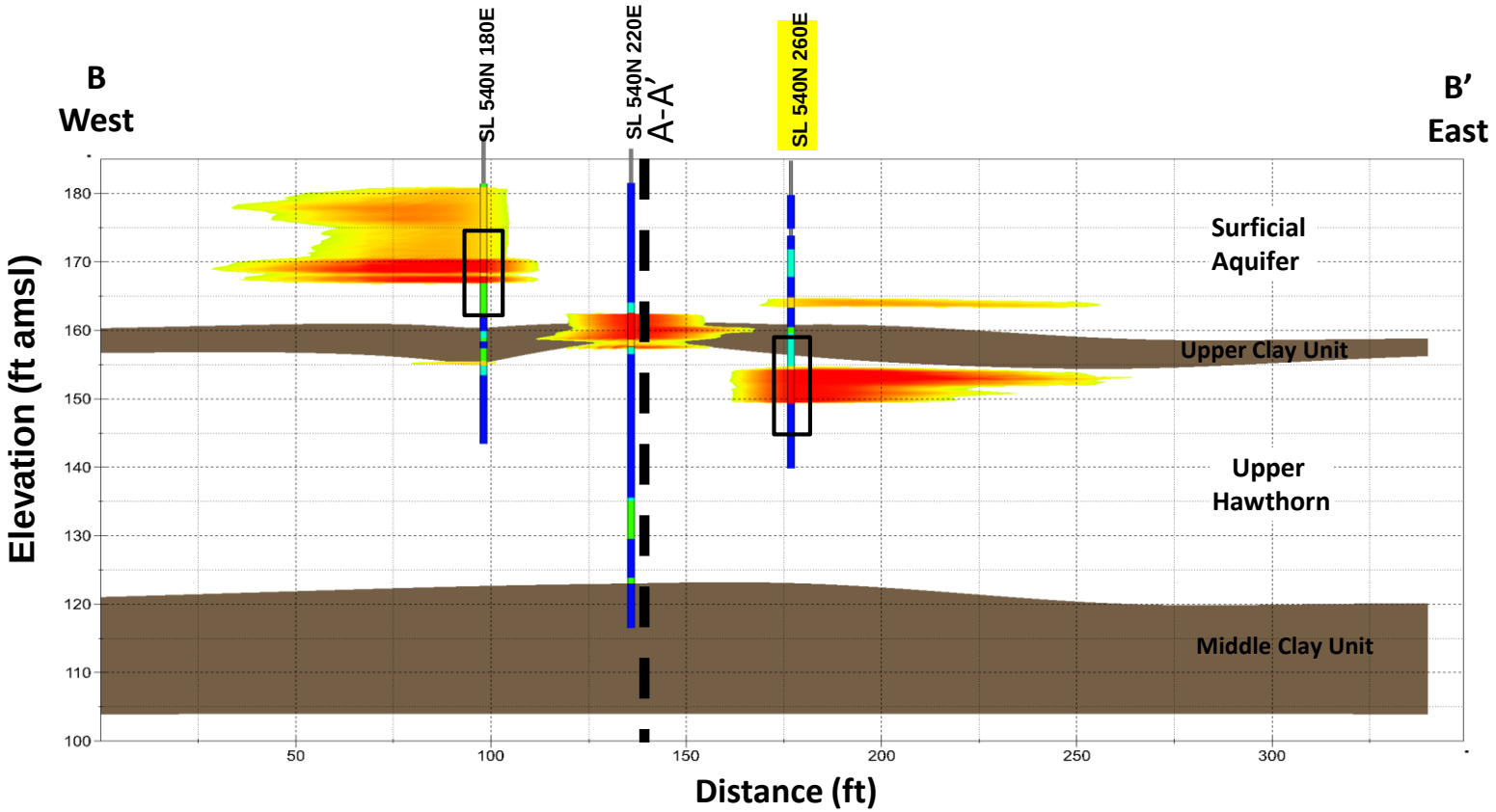
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APPROVED	JRE
DRAFTED	MRI/CKG
PROJECT #	117-2201398
DATE	04/04/2017

FIGURE **6A**

"T:\Gainesville\SGS\ Process Area Remediation\EVS\Sections with TIPS collecting NAPL\Fig N. Sections with TIPS collecting NAPL.ppt"

CROSS-SECTION B-B’



Vertical Exaggeration 1.85:1

Explanation:

TIP/Well Screen and Filter Pack Interval

SL 260N 180E — TIP/Well Recovering DNAPL

B-B’ — Perpendicular Cross Section

NAPL Category
- 5 - Visible Mobile NAPL
- 4 - Heavy Staining
- 3 - Light Staining
- 2 - Elevated PID
- 1 - No NAPL

TITLE: **CROSS-SECTION B-B’ with TIPs/Wells Recovering DNAPL**

LOCATION: **Former South Lagoon, Cabot Carbon/Koppers Superfund Site, Gainesville FL**

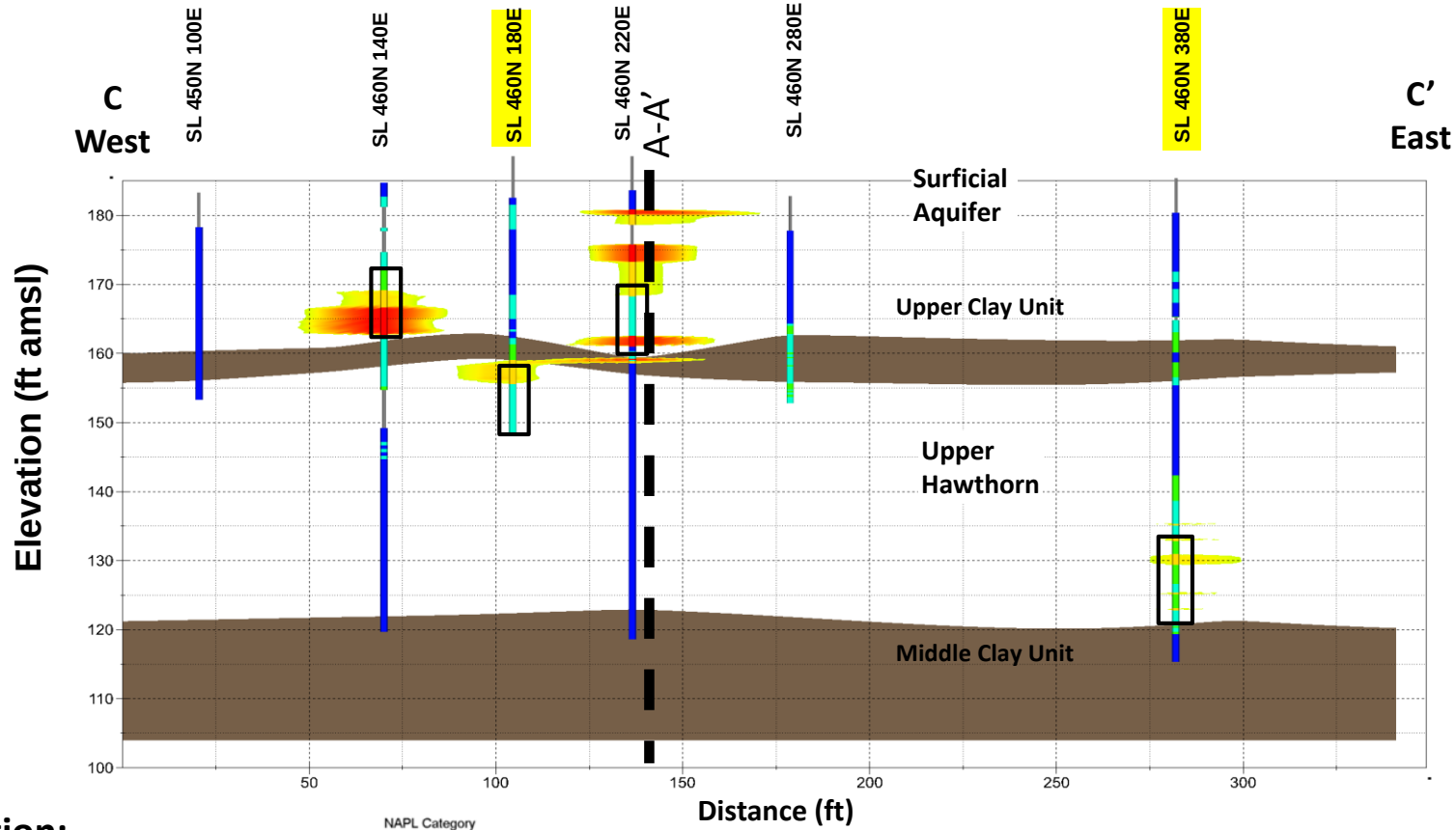
TETRA TECH

APPROVED	JRE
DRAFTED	MRI/CKG
PROJECT #	117-2201398
DATE	04/04/2017

FIGURE **6B**

"T:\Gainesville\SGS_Process Area Remediation\EVS\Sections with TIPS collecting NAPL\Fig N_Sections with TIPS collecting NAPL.ppt"

CROSS-SECTION C-C’



Vertical Exaggeration 1.85:1

Explanation:

TIP/Well Screen and Filter Pack Interval

SL 260N 180E — TIP/Well Recovering DNAPL

B-B’ — Perpendicular Cross Section

NAPL Category
- 5 - Visible Mobile NAPL
- 4 - Heavy Staining
- 3 - Light Staining
- 2 - Elevated PID
- 1 - No NAPL

TITLE: **CROSS-SECTION C-C’ with TIPs/Wells Recovering DNAPL**

LOCATION: **Former South Lagoon, Cabot Carbon/Koppers Superfund Site, Gainesville FL**

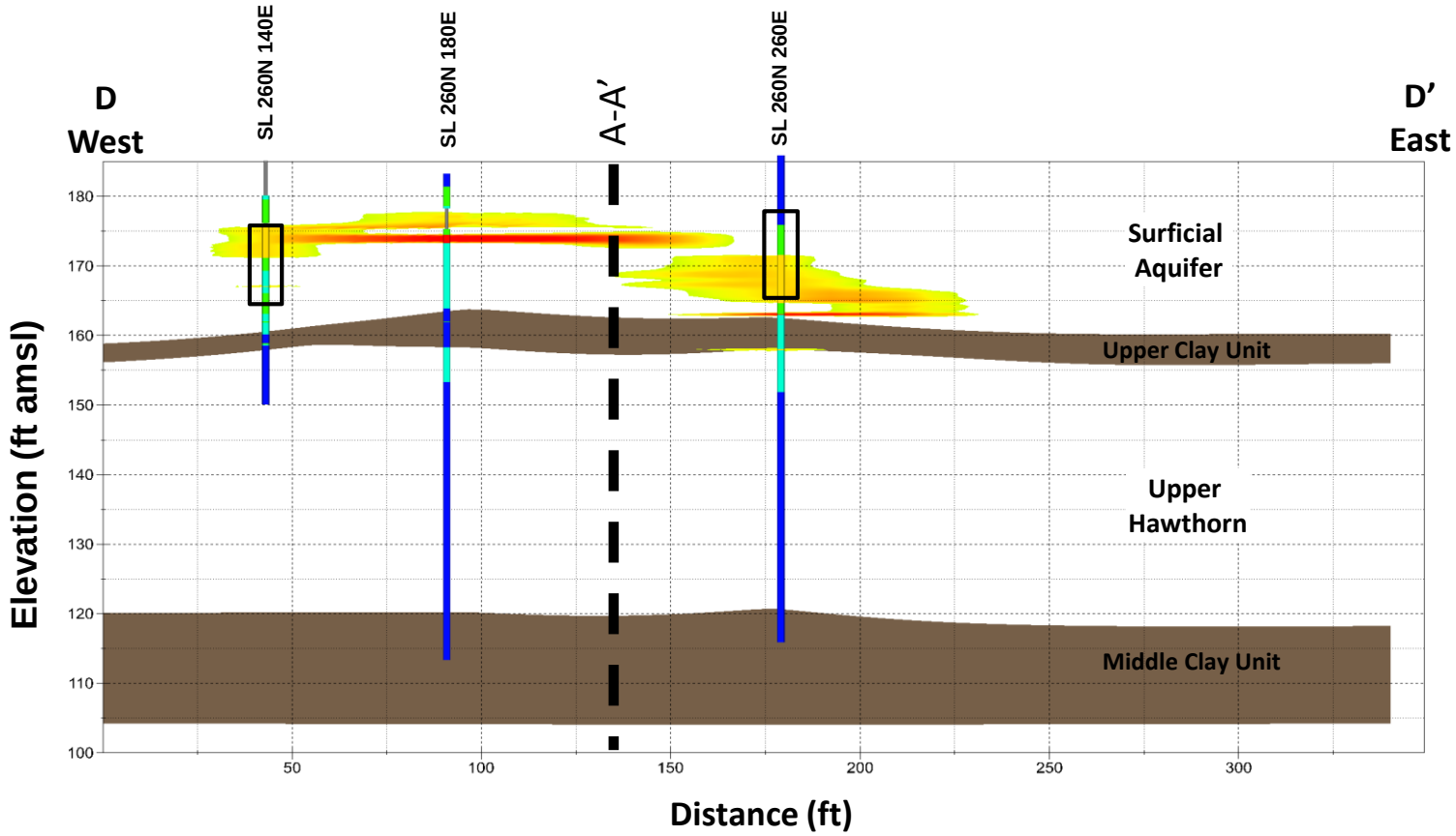
TETRA TECH

APPROVED	JRE
DRAFTED	MRI/CKG
PROJECT #	117-2201398
DATE	04/04/2017

FIGURE **6C**

"T:\Gainesville\SGS_Process Area Remediation\EVS\Sections with TIPS collecting NAPL\Fig N_Sections with TIPS collecting NAPL.ppt"

CROSS-SECTION D-D’



Vertical Exaggeration 1.85:1

Explanation:

TIP/Well Screen and Filter Pack Interval

SL 260N 180E — TIP/Well Recovering DNAPL

B-B’ — Perpendicular Cross Section

NAPL Category
- 5 - Visible Mobile NAPL
- 4 - Heavy Staining
- 3 - Light Staining
- 2 - Elevated PID
- 1 - No NAPL

TITLE: **CROSS-SECTION D-D’ with TIPs/Wells Recovering DNAPL**

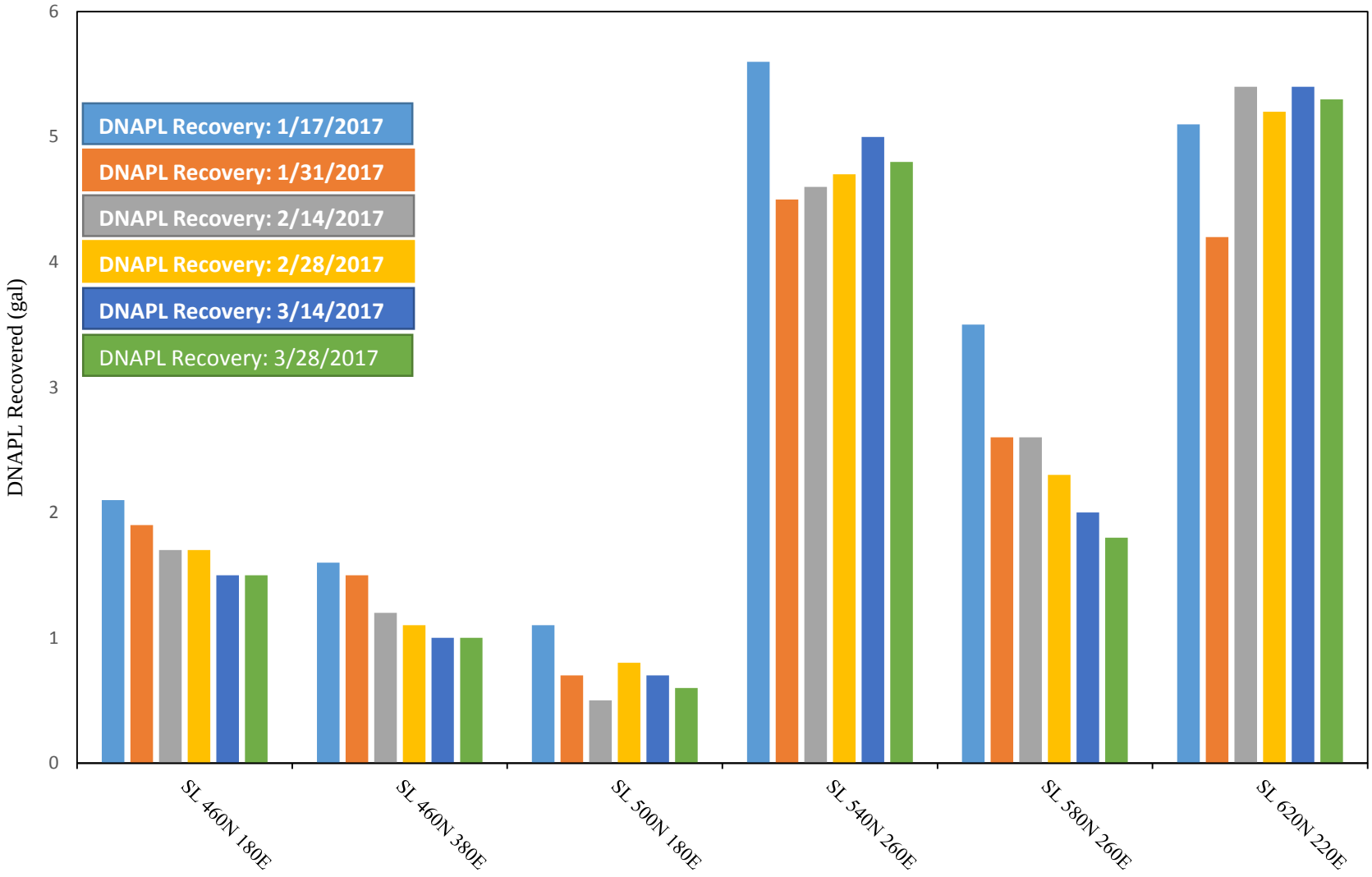
LOCATION: **Former South Lagoon, Cabot Carbon/Koppers Superfund Site, Gainesville FL**

TETRA TECH

APPROVED	JRE
DRAFTED	MRI/CKG
PROJECT #	117-2201398
DATE	04/04/2017

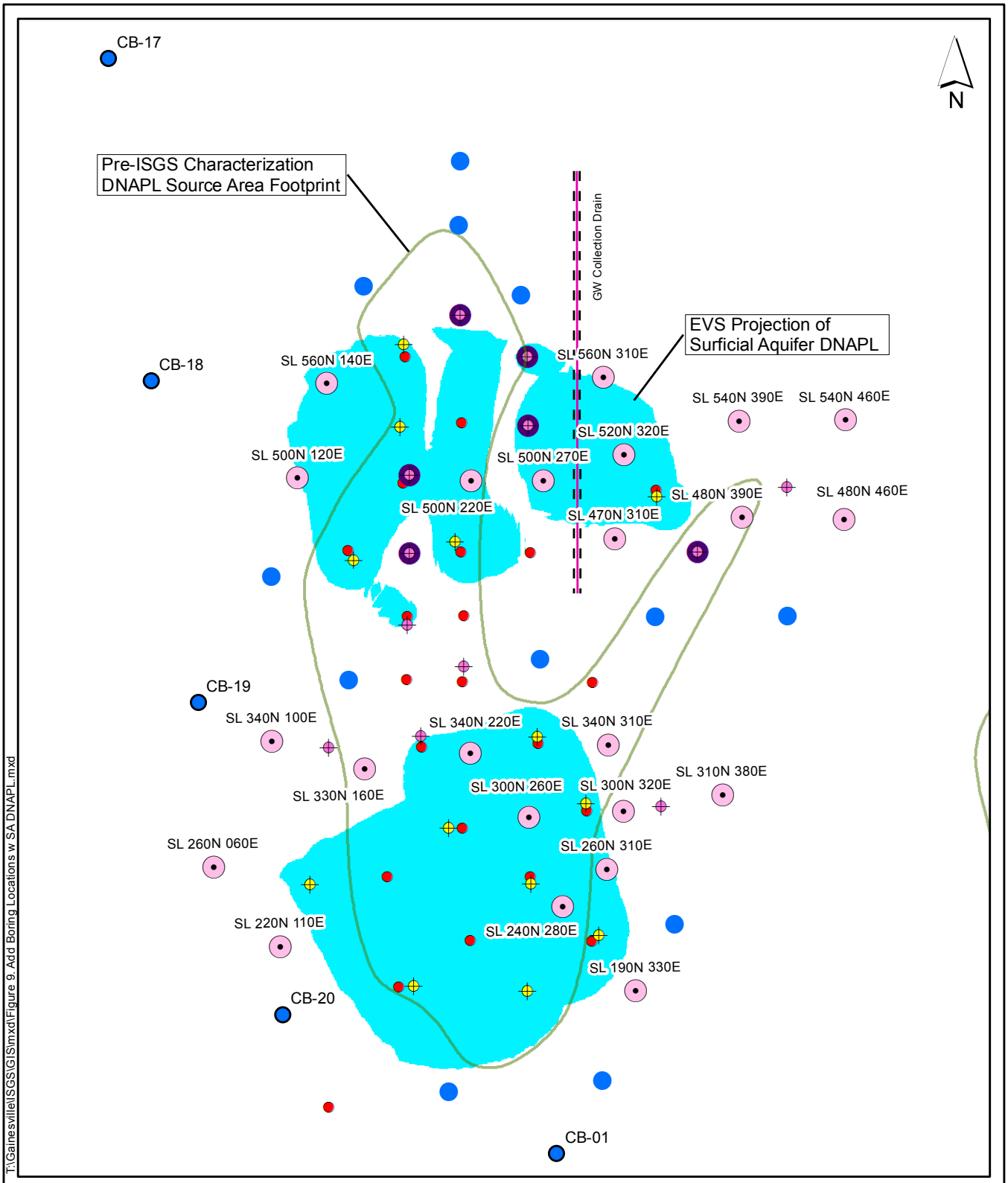
FIGURE **6D**

"T:\Gainesville\SGS_Process Area Remediation\EVS\Sections with TIPS collecting NAPL\Fig N_Sections with TIPS collecting NAPL.ppt"



TETRA TECH	TITLE: **DNAPL Recovery for TIPs/Wells Former South Lagoon**	LOCATION: **Cabot Carbon/Koppers Superfund Site, Gainesville FL**	FIGURE: **7**

DRAFTED: MRI	APPROVED: JRE	PROJECT: 117-2201398	DATE: 4-4-2017	T:\GAINESVILLE\ISGS\SOUTH LAGOON\DNAPL MONITORING\



Explanation:

- As-Built Boring Location
- TIP/Well Location, No Recoverable DNAPL: Surficial Aquifer (yellow), Upper Hawthorn (pink)
- TIP/Well with Recoverable DNAPL
- SL 560N 140E — Proposed New Boring and ID
- CB-01 — Cement Bentonite Wall Geotech Boring, No DNAPL Staining/Free-Phase Observed
- As-Built Boring Location, No DNAPL Staining/Free-Phase Observed

0 40 80 160 240 Feet

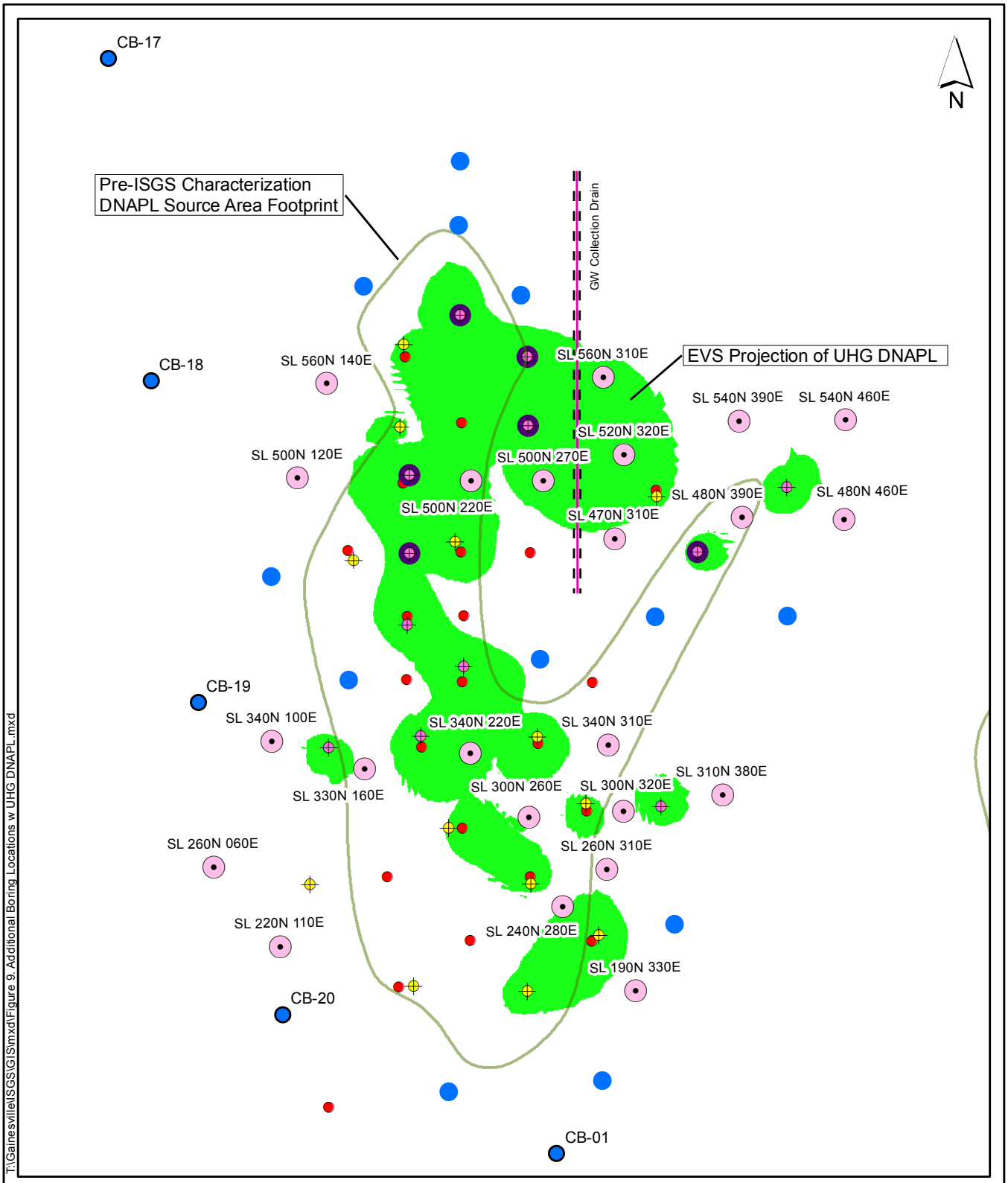
TITLE: Proposed New Borings and Surficial Aquifer DNAPL Distribution

LOCATION: Cabot Carbon/Koppers Superfund Site Gainesville, FL

TETRA TECH

CHECKED	JRE
DRAFTED	MRI
PROJECT	117-2201398
DATE	04/04/2017

FIGURE: 8



Explanation:

- As-Built Boring Location
- TIP/Well Location, No Recoverable DNAPL: Surficial Aquifer (yellow), Upper Hawthorn (pink)
- TIP/Well with Recoverable DNAPL
- SL 560N 140E — Proposed New Boring and ID
- CB-01 — Cement Bentonite Wall Geotech Boring, No DNAPL Staining/Free-Phase Observed
- As-Built Boring Location, No DNAPL Staining/Free-Phase Observed

0 40 80 160 240 Feet

TITLE: Proposed New Borings and Upper Hawthorn DNAPL Distribution

LOCATION: Cabot Carbon/Koppers Superfund Site Gainesville, FL

TETRA TECH

CHECKED	JRE
DRAFTED	MRI
PROJECT	117-2201398
DATE	04/04/2017

FIGURE: 9

TABLES

Table 1. ISGS Investigation boring coordinates and elevations for former South Lagoon.

Boring/Well ID	Date Completed	Northing[2] (ft)	Easting[2] (ft)	Ground Surface Elevation (ft amsl)[3]	Total Depth (ft bgs)
SL 110N 140E	11/21/2016	251768.265	2658474.600	183.5	40.0
SL 140N 220E	11/4/2016	251778.175	2658549.300	183.9	70.0
SL 140N 300E	11/22/2016	251784.799	2658642.829	183.5	35.0
SL 180N 180E [1]	11/17/2016	251837.387	2658525.895	183.4	70.0
SL 180N 260E	11/15/2016	251839.280	2658596.951	183.8	70.0
SL 220N 220E	11/3/2016	251870.801	2658561.923	183.2	70.0
SL 220N 300E [1]	11/3/2016	251873.726	2658641.281	184.0	70.0
SL 220N 340E	11/20/2016	251880.124	2658687.789	184.1	35.0
SL 260N 140E	11/19/2016	251904.910	2658463.230	183.1	35.0
SL 260N 180E	11/3/2016	251909.832	2658510.987	183.3	70.0
SL 260N 260E [1]	11/3/2016	251905.495	2658599.286	183.9	70.0
SL 300N 220E [1]	11/17/2016	251940.489	2658548.508	183.4	70.0
SL 300N 300E [1]	11/4/2016	251955.110	2658633.126	183.4	70.0
SL 300N 340E	11/19/2016	251953.624	2658679.681	181.3	39.8
SL 340N 140E	11/19/2016	251989.650	2658474.773	182.7	50.0
SL 340N 180E [1]	11/2/2016	251996.722	2658531.596	186.8	70.0
SL 340N 260E	11/6/2016	251996.122	2658603.252	185.5	70.0
SL 380N 140E	11/2/2016	252030.141	2658486.638	182.7	65.0
SL 380N 180E	11/18/2016	252031.604	2658522.697	186.3	45.0
SL 380N 220E [1]	11/6/2016	252039.617	2658557.797	186.6	70.0
SL 380N 300E	11/15/2016	252029.922	2658637.217	182.9	70.0
SL 400N 280E	11/18/2016	252044.571	2658605.222	183.1	35.0
SL 420N 180E [1]	11/6/2016	252065.144	2658523.102	186.5	70.0
SL 420N 220E	11/21/2016	252070.564	2658557.791	186.7	35.0
SL 420N 340E	11/14/2016	252069.927	2658676.497	183.4	65.0
SL 420N 420E	11/21/2016	252070.125	2658757.366	189.3	73.0
SL 450N 100E	11/19/2016	252094.824	2658440.445	183.3	30.0
SL 460N 140E [1]	11/2/2016	252105.110	2658490.029	182.7	65.0
SL 460N 180E	11/17/2016	252109.493	2658524.579	186.5	40.0
SL 460N 220E [1]	11/7/2016	252116.661	2658552.585	186.6	70.0
SL 460N 280E	11/18/2016	252109.661	2658598.853	182.8	30.0
SL 460N 380E	11/15/2016	252110.521	2658701.946	183.3	70.0
SL 500N 180E [1]	11/1/2016	252157.583	2658524.334	186.3	70.0
SL 500N 350E	11/20/2016	252144.088	2658676.706	181.1	65.0
SL 500N 420E	11/21/2016	252150.075	2658756.963	188.3	70.0
SL 540N 180E	11/17/2016	252187.031	2658518.927	186.4	45.0
SL 540N 220E	11/7/2016	252189.742	2658556.818	186.5	70.0
SL 540N 260E	11/18/2016	252187.854	2658597.697	182.8	45.0

Table 1. ISGS Investigation boring coordinates and elevations for former South Lagoon.

Boring/Well ID	Date Completed	Northing[2] (ft)	Easting[2] (ft)	Ground Surface Elevation (ft amsl)[3]	Total Depth (ft bgs)
SL 580N 180E [1]	11/1/2016	252237.476	2658521.084	186.4	72.0
SL 580N 260E	11/14/2016	252230.000	2658597.197	182.8	65.0
SL 620N 160E	11/18/2016	252273.607	2658495.987	182.1	40.0
SL 620N 220E	11/7/2016	252255.685	2658555.667	186.5	70.0
SL 620N 260E	11/18/2016	252267.994	2658592.926	182.7	40.0
SL 660N 220E	11/18/2016	252310.994	2658555.459	182.5	40.0
SL 700N 220E	10/31/2016	252351.974	2658556.869	182.6	63.0

Notes:

[1] Boring locations hand measured in field based on adjacent surveyed TIP/Wells.

[2] NAD 1983, 2011 Florida State Plane North, FIPS 0903, Lambert Conformal Conic Projection.

[3] Elevation survey conducted using NAVD88.

Table 2. ISGS TIP/DNAPL recovery well and monitoring well construction and completion depths for South Lagoon.

TIP/Well ID	Date Completed	Northing[(2)] (ft)	Easting[(2)] (ft)	TOC Elevation, Surveyed (ft amsl)[(4)]	TIP/Well Completed in Boring or Stepout	Bentonite Seal (ft bgs)	Filter Pack Interval (ft bgs)	Screened Interval[(1)] (ft bgs)	Hydrogeologic Unit
SL 180N 180E	11/17/2016	251837.387	2658525.895	185.394	Stepout	7-9	9-22.5	12.5-22.5	Surficial
SL 180N 260E	11/15/2016	251839.280	2658596.951	185.840	Boring	8-10	10-22.9	12.9-22.9	Surficial
SL 220N 300E	11/9/2016	251873.726	2658641.281	186.017	Stepout	6.8-11	11-23	13.3-23.3	Surficial
SL 260N 140E	11/19/2016	251904.910	2658463.230	185.116	Boring	7-9	9-20.6	10.6-20.6	Surficial
SL 260N 260E	11/22/2016	251905.495	2658599.286	185.873	Stepout	7-9	9-20	10-20	Surficial
SL 300N 220E	11/17/2016	251940.489	2658548.508	185.368	Stepout	4-6	6-18.3	8.3-18.3	Surficial
SL 300N 300E	11/22/2016	251955.110	2658633.126	185.447	Stepout	7-9	9-21.4	11.35-21.35	Surficial
SL 300N 340E	11/19/2016	251996.122	2658603.252	183.268	Boring	24.5-26.5	26.5-39.8	29.8-39.8	Hawthorn
SL 340N 140E	11/19/2016	251996.722	2658531.596	184.677[(3)]	Boring	31-33	33-45	35-45	Hawthorn
SL 340N 180E	11/8/2016	251989.650	2658474.773	188.765	Stepout	28-30.5	30.5-42.9	32.9-42.9	Hawthorn
SL 340N 260E	11/22/2016	252039.617	2658557.797	187.506	Stepout	8-10	10-22.2	12-22	Surficial
SL 380N 220E	11/8/2016	251953.624	2658679.681	188.641	Stepout	28-31	31-44.1	34.1-44.1	Hawthorn
SL 420N 180E	11/22/2016	252144.088	2658676.706	188.549	Stepout	27-29	29-41.4	31.4-41.4	Hawthorn
SL 460N 140E	11/9/2016	252110.521	2658701.946	184.678	Stepout	7-10	10-22.7	12.7-22.7	Surficial
SL 460N 180E	11/17/2016	252230.000	2658597.197	188.518	Boring	20-24.1	24.1-40	29.9-39.9	Hawthorn
SL 460N 220E	11/9/2016	252187.854	2658597.697	188.593	Stepout	8.5-11.3	11.3-28.6	18.6-28.6	Surficial
SL 460N 380E	11/15/2016	252187.031	2658518.927	185.345	Boring	49-51	51-63.4	54.3-64.3	Hawthorn
SL 500N 180E	11/9/2016	252237.476	2658521.084	188.337	Stepout	20-24.1	24.1-36.7	26.7-36.7	Hawthorn
SL 500N 350E	11/23/2016	252255.685	2658555.667	183.127[(3)]	Stepout	9.5-11.5	11.5-23.7	13.65-23.65	Surficial
SL 500N 420E	11/21/2016	252157.583	2658524.334	190.278	Boring	53.1-55.1	55.1-67.1	57.1-67.1	Hawthorn
SL 540N 180E	11/22/2016	252109.493	2658524.579	188.406	Boring	12-13.5	13.5-25.8	15.8-25.8	Surficial
SL 540N 260E	11/18/2016	252116.661	2658552.585	184.811	Boring	26-28	28-40	30-40	Hawthorn
SL 580N 180E	11/22/2016	252105.110	2658490.029	188.379	Stepout	11.5-13.5	13.5-25.5	16.6-26.6	Surficial
SL 580N 260E	11/14/2016	252065.144	2658523.102	184.828	Boring	26-28	28-40	29.8-39.8	Hawthorn
SL 620N 220E	11/7/2016	252150.075	2658756.963	188.483	Stepout	30.3-32.3	32.3-46.1	34.9-44.9	Hawthorn

Notes:

(1) All 25 TIP/wells were completed with 10 ft long, 20-slot stainless-steel Schedule 80 screens and stainless-steel casing.

(2) NAD 1983, 2011 Florida State Plane North, FIPS 0903, Lambert Conformal Conic Projection.

(3) Well completed with flush mount vault, all other wells completed with 2.0 ft Schedule 80 PVC stickup with threaded cap.

(4) Elevation survey conducted using NAVD88.

Table 3. Phase II supplemental borings, estimated depths and investigation objectives.

Boring ID	Estimated Boring Depth (ft)	TIP/Well Completion	Hydrologic Unit Delineation	Objective
SL 560N 140E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent; EVS Model Unconstrained SA
SL 560N 310E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent; EVS Model Unconstrained SA/UH
SL 540N 390E	65-70	No	UH	Lateral Extent Deep DNAPL Plume by SL 460N 380E
SL 540N 460E	65-70	No	UH	Lateral Extent Deep DNAPL Plume by SL 460N 380E
SL 520N 320E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent; EVS Model Unconstrained SA/UH
SL 500N 120E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent; EVS Model Unconstrained SA/UH
SL 500N 220E	35-40	Yes?	SA/UH	DNAPL Plume Lobes Laterally Connected?
SL 500N 270E	35-40	Yes?	SA/UH	DNAPL Plume Lobes Laterally Connected?
SL 480N 390E	65-70	Yes	UH	Lateral Extent Deep DNAPL Plume by SL 460N 380E
SL 480N 460E	65-70	No	UH	Lateral Extent Deep DNAPL Plume by SL 460N 380E
SL 470N 310E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent; EVS Model Unconstrained SA
SL 340N 100E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent
SL 340N 220E	35-40	Yes?	UH	DNAPL Plume Lobes Laterally Connected?
SL 340N 310E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent
SL 330N 160E	35-40	No	UH	DNAPL Plume Lobes Laterally Connected?
SL 310N 380E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent
SL 300N 260E	35-40	Yes	UH	DNAPL Plume Lobes Laterally Connected?
SL 300N 320E	35-40	Yes?	UH	DNAPL Plume Lobes Laterally Connected?
SL 260N 060E	25-30	No	SA	DNAPL Plume Footprint Areal Extent
SL 260N 310E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent
SL 240N 280E	35-40	Yes	UH	DNAPL Plume Lobes Laterally Connected?
SL 220N 110E	25-30	No	SA	DNAPL Plume Footprint Areal Extent; EVS Model Unconstrained SA
SL 190N 330E	35-40	No	SA/UH	DNAPL Plume Footprint Areal Extent

SA Surficial Aquifer
UH Upper Hawthorn/Upper Clay Unit

APPENDIX A

BORING LOGS AND TIP/WELL AS-BUILTS

TETRA TECH
Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 110N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 183.492 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** 4"

DRILLING METHOD Rotasonic **NORTHING** 251768.265 ft **EASTING** 2658474.6 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0				5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines Hand auger 0-4 ft, log based on cuttings	Surficial Deposits	Cement-Grout
				5					
				5					
				5					
				5					
				5					
				5					
5		0.5	1	5					
			1	5					
			1	5			5.5 178.0		
		0.8	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4					
		0.8	1	4					
	100		1	4			7.0 176.5		
			1	5	SM		POORLY GRADED SAND, (SM) 80% sand, 20% fines SA-SM-A		
		0.9	1	3					
			1	3					
		1	1	3					
			1	3					
		0.9	1	3					
10									4" Borehole
			1						
		0	1	3					
			1	3			11.0 172.5		
			1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		0	1	4					
			1	4	SP				
		0	1	4					
			1	4			13.0 170.5		
			1	3			SILTY SAND, (SM) 80% sand, 20% fines SA-SM		
		0	1	3	SM				
			1	3			14.2 169.3		
		0	1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
15			1	3					
	100		1	4	SP				
		0	1	4					
			1	4					
			1	4			16.5 167.0		
		0	1	3			SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3					
		0.2	1	3					
			1	3	SM				
		0.7	1	3					
			1	3					
		0.9	1	3					
20			1	3			20.0 163.5		

(Continued Next Page)

ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:24 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ

TETRA TECH
Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 110N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 183.492 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** 4"

DRILLING METHOD Rotasonic **NORTHING** 251768.265 ft **EASTING** 2658474.6 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		1.3	1	5	SP		20.5 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B 163.0	Surficial Deposits	Cement-Grout
			1	2					
			1	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		0.3	1	2					
			1	2					
		0.5	1	2					
			1	2					
		0.6	1	2			23.7 159.8		
			1	1.5	CH/SM		24.2 INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 20% sand, 80% fines UHG-CH/SM 159.3	UHG Clay	
		0.8	3	1	CH		24.6 FAT CLAY, (CH) 100% fines UHG-CH 158.9		
25			1	2	SM		25.0 SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C 158.5		
			1	1.5	CL/SM		25.5 INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM 158.0		
		0.9	3	1.5					
			1	1.5	CH/SM		26.3 INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 20% sand, 80% fines UHG-CH/SM 157.2		
		1	3	2					
			1	2					
		0.6	1	2			SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			1	2					
		0.5	1	2	GM				
			1	2					
		0.5	1	2					
30			1	2					4" Borehole
	100	0.4	1	2			30.5 153.0		
			1	3			SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	
			1	3					
		0.4	1	3					
			1	3					
		0.5	1	3					
			1	3					
		0.2	1	3	SM				
			1	3					
35		0.2	1	3					
			1	3					
		0.4	1	3					
			1	3					
		0.3	1	3			36.5 147.0		
			1	3			SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		0.2	1	3					
			1	3					
		0.3	1	3	SM				
			1	3					
		0.3	1	3					
40							40.0 143.5		

Bottom of borehole at 40.0 feet.

ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:24 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ

TETRA TECH
Tetra Tech
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Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 140N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/4/16 **COMPLETED** 11/4/16 **GROUND ELEVATION** 183.855 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251778.175 ft **EASTING** 2658549.3 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0					OL		SANDY ORGANIC SOIL, (OL) 60% sand, 40% fines Hand auger, log based on cuttings 1.0 182.9	Surficial Deposits	Cement-Grout
					SP		POORLY GRADED SAND, (SP) 80% sand, 20% fines Hand auger, log based on cuttings 4.0 179.9		
5					SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines Hand auger, log based on cuttings 5.0 178.9		
	80	0	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B 9.0 174.9		
10		0	1	0			No Recovery 10.0 173.9		6" Borehole
		0.1	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B 17.5 166.4		
15		0.6	1	5					
		0.5	1	5					
		0.7	1	5					
		1.8	1	5					
		1.9	1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
20		1.7	1	3.5					

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/4/16 **COMPLETED** 11/4/16 **GROUND ELEVATION** 183.855 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251778.175 ft **EASTING** 2658549.3 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	89	3.6	1	0	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B *(continued)*	UHG Clay	Cement-Grout
			1	3.5			20.9 163.0		
			1	3.5	CH		21.2 FAT CLAY, (CH) 0% sand, 100% fines UHG-CH 162.7		
		18	1	1					
			1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		3.1	1	2					
			1	2			23.3 160.6		
		0.7	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			1	2					
25		0	1	2					
			1	2	SM				
		0.4	1	2					
			1	2					
		0.2	1	2					
			1	2			27.0 156.9		
		0.1	1	2	ML		27.7 SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A 156.2		
30							No Recovery	Upper Hawthorn	6" Borehole
35							36.0 147.9		
		0.5	1	2			SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
			1	2					
		0.2	1	2					
			1	2	ML				
		0	1	2					
			1	2					
40		0	1	2					

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DRILLING METHOD Rotasonic **NORTHING** 251778.175 ft **EASTING** 2658549.3 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	71	0	1	2	ML		40.4 143.5 SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	Cement-Grout
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
45		0	1	2.5					6" Borehole
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
50		0	1	2.5					
			1		SM				
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
55		0	1	2.5					4" Borehole
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
60		0	1	2.5					

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/4/16 **COMPLETED** 11/4/16 **GROUND ELEVATION** 183.855 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251778.175 ft **EASTING** 2658549.3 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	4" Borehole
			1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2			63.9		
		0	1	2	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SILTY, (SM-CL) 20% sand, 80% fines MHG-CL-SM		
65			1	2			65.3 — 118.6		
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL	MHG Clay	
			1	1					
		0	1	1					
			1	1					
		0	1	1					
			1	1					
		0	1	1					
			1	1			69.2 — 114.7		Cement-Grout
70		0	1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH		
							70.0 — 113.9		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 140N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/22/16 **COMPLETED** 11/22/16 **GROUND ELEVATION** 183.455 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** 4"

DRILLING METHOD Rotasonic **NORTHING** 251784.799 ft **EASTING** 2658642.829 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							Hand auger, log based on cuttings	No Core	Cement-Grout
5							5.0 / 178.5		
		0.4	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	Surficial Deposits	
			1	5					
		0	1	5					
			1	5			7.2 / 176.3		
	90	0.3	1	4	SP		7.5 / 176.0 POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	5	SM				
			1	2			8.2 / 175.3 SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		0	1	2	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3					
		0.7	1	3			9.5 / 174.0		
10			1				10.0 NO CORE / 173.5		4" Borehole
			1				POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		0.1	1	4					
			1	4					
		0	1	4	SP				
			1	4					
		0.2	1	4					
			1	4					
		0.3	1	4			13.5 / 170.0		
			1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		0.2	1	4					
15	100		1	4	SP				
		0.1	1	4					
			1	4					
		0	1	4			16.5 / 167.0		
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5					
		0	1	5	SP				
			1	5			18.2 / 165.3		
		0.2	1	3			SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3					
		0.1	1	3	SM				
20							20.0 / 163.5		

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Telephone: (303) 447-1823

BORING ID: SL 140N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/22/16 **COMPLETED** 11/22/16 **GROUND ELEVATION** 183.455 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** 4"

DRILLING METHOD Rotasonic **NORTHING** 251784.799 ft **EASTING** 2658642.829 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		0.4	1	3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3			21.2 / 162.3		
		0	1	1.5	CH/SM		21.6 / 161.9 INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), SILTY, (CH/SM) 20% sand, 80% fines UHG-CH/SM	UHG Clay	
			1	1	CH		22.2 / 161.3 FAT CLAY, (CH) 100% fines UHG-CH		
		0.4	1	1.5	CL/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), SILTY, (CL/SM) 20% sand, 80% fines UHG-CL/SM		
			1	1.5					
		0.6	1	1.5			23.6 / 159.9		
			1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
25		1.1	1	2					
			1	2			25.3 / 158.2		Cement-Grout
		1.7	1	2	SM		SILTY SAND, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A	Upper Hawthorn	
			1	2					
		1.6	1	2					
			1	2					
	100	1.2	1	3					
			1	2					
		1.2	1	2					
			1	2					
		1.3	1	2					
30			1	2					
		1.7	1	2					
			1	2					
		2	1	2					
			1	2					4" Borehole
		2.1	1	2					
			1	2					
		2.5	1	2			33.5 / 150.0		
			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
			1	3					
35		2.3	1	3			35.0 / 148.5		

Bottom of borehole at 35.0 feet.

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BORING ID: SL 180N 180E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/17/16 **COMPLETED** 11/17/16
GROUND ELEVATION 183.394 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 251837.387 ft **EASTING** 2658525.895 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 185.394 (ft amsl) **Stickup** 2 ft
NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0							No Core, hand auger	Surficial Deposits
5							5.0 / 178.4	
							No Recovery	
							6.5 / 176.9	
	70		2	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A	
			2	4				
			5	4				
			5	4				
			5	4				
10			5	4				
			5					
		10	5	4				
			5	4	SP			
		17	5	4				
			4	4				
		10	4	4				
			5	4				
		17	5	4				
			5	4				
		23	5	4				
15			5	4				
		115	5	4			15.5 / 167.9	
			4	3.5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	
		130	4	3.5	SM			
			4	3.5			17.2 / 166.2	
		65	4	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
			4	5				
		58	5	5	SP			
			5	5				
20		120	4	5				

WELL CONSTRUCTION DIAGRAM
2" PVC Riser
Cement-Grout
2" SS Riser (threaded)
6" borehole
Fine Sand
Bentonite
Filter Sand
10 ft Screen, 20 slot, SS

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BORING ID: SL 180N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 183.394 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251837.387 ft **EASTING** 2658525.895 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.394 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	115	4	4	SP		20.5 — 162.9		
			4	5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM	UHG Clay	Filter Sand
			3	5			21.5 — 161.9		
		100	3	1.5					
			2	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
		30	2	1					
			2	1			23.5 — 159.9		
		150	3	1	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 30% sand, 70% fines UHG-CH-SM		Bottom of screen at 22.5 ft bgs
			1	1.5					
		60	2	1.5					
25			1	1.5			25.0 — 158.4		
		42	2	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SP-B	Upper Hawthorn	
			2	2.5			26.0 — 157.4		
		30	1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			1	2					
		32	3	2					
			1	2					
		29	1	2					
			1	2					
30		25	1	2			30.0 — 153.4		
			1				No Recovery		
		3.8	1						
			1						
		4.9	1						
			1				32.0 — 151.4		
		5.5	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			1	2					
		3.1	1	2					
			1	2					
		3.7	1	2					
35			1	2					
		6.5	1	2			35.5 — 147.9		
			1	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL-SM		
		3.2	1	1.5			36.5 — 146.9		
			1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
		3.1	1	2					
			1	2					
		1.8	1	2					
			1	2					
40		1.4	1	2					

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BORING ID: SL 180N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 183.394 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251837.387 ft **EASTING** 2658525.895 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.394 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	90	0	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A *(continued)*	Upper Hawthorn	
			1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2	SM				
		0	1	2					
			1	2					
		0	1	2					
45			1	2					
		0	1	2					
			1	2			46.0 137.4		
		0	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2					
		0	1	2					
			1	2	SM				
		0	1	2					
			1	2					
50		0	1	2			50.0 133.4		
			1				SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		0	1	2.5	SM				
			1	2.5					
		0	1	2.5			51.5 131.9		
			1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
55			1	2					
		0	1	2					
			1	2	SM				
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
60		0	1	2					

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Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 180N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 183.394 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251837.387 ft **EASTING** 2658525.895 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.394 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*	Upper Hawthorn	
			1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2			62.5 120.9		
			1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		0	1	2.5					
			1	2.5					
		0	1	2.5					
65			1	2.5					
		0	1	2.5			65.5 117.9		
			1	2	CL/SM		66.0 INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SILTY, (CL/SM) 20% sand, 80% fines MHG-SM-CL 117.4	MHG Clay	
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
			1	1					
		0	1	1					
			1	1					
		0	1	1					
			1	1					
70		0	1	1	CH		69.4 114.0 FAT CLAY, (CH) 100% fines MHG-CH 70.0 113.4		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 180N 260E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/15/16 **COMPLETED** 11/15/16
GROUND ELEVATION 183.84 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 251839.28 ft **EASTING** 2658596.951 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 185.84 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0							No core, hand auger	Surficial Deposits
5							5.0 — 178.8	
		47	3	5	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A	
			3	5				
			3	5				
		101	3	5				
			4	5				
	100	170	5	5				
		110	5	5			8.0 — 175.8	
			2	3.5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	
			2	3.5				
10		280	2	3.5			10.0 — 173.8	
			1				No Recovery	
							11.0 — 172.8	
			4	4.5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
		35	4	4.5				
			4	4.5				
		90	5	4.5				
			5	4.5				
		83	5	4.5				
			5	4.5				
		115	5	4.5				
15			5	4.5				
		15.5	5	4.5			15.5 — 168.3	
			3	4	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	
		93	3	4				
			4	4				
		59	4	4				
			4	4				
		63	4	4				
			4	4				
		140	4	4				
20								

WELL CONSTRUCTION DIAGRAM
2" PVC Riser
2" SS Riser (threaded)
6" Borehole
Cement-Grout
Fine Sand
Bentonite
Filter Sand
10 ft screen, 20 slot, SS

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BORING ID: SL 180N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 183.84 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251839.28 ft **EASTING** 2658596.951 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.84 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	95	90	4	3.5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A *(continued)*	Surficial Deposits	Filter Sand
			4	4					
			4	4					
		77	4	4					
			4	4					
		68	4	4					
			4	4					
		108	4	1			23.3 / 160.5		Bottom of screen at 22.9 ft bgs
			2	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		34	4	1			24.8 / 159.0		
25			2	1	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 30% sand, 70% fines UHG-CH/SM		
		130	3	1.5					
			4	1.5					
		68	2	1.5			27.0 / 156.8		
			4	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		77	2	2					
			2	2					
		49	4	2					
			2	2					
		33	2	2			30.0 / 153.8		6" Borehole
30							No Recovery	Upper Hawthorn	
									Bentonite
35									
		5	1	4			37.5 / 146.3		
			1	4	SM		SILTY SAND WITH GRAVEL, (SM) 80% sand, 20% fines UHG-SM-A		
		5	1	4					
			1	4			39.3 / 144.5		
		10	1	3	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines MHG-SM-CL		
40									

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BORING ID: SL 180N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 183.84 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251839.28 ft **EASTING** 2658596.951 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.84 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	63	11	1	3	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines MHG-SM-CL *(continued)*	Upper Hawthorn	6" Borehole
		11					42.0 141.8		
		7.2			SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D		
		8.1							
45		9.4							
		9.5					46.0 137.8		
		9.7			CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL-SM		
		9.6					48.0 135.8		
		9.5			SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D		
50		9							
		0							4" Borehole
		0							
		0							Bentonite
		0							
55		0							
		0							
		0							
		0							
60		0							

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CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 183.84 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251839.28 ft **EASTING** 2658596.951 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.84 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D *(continued)*	Upper Hawthorn	4" Borehole
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
65		0	1	2.5					
			1	1.5			65.3		
		0	1	1.5	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL	MHG Clay	Bentonite
			1	1.5			66.2 117.6		
		0	1	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines MHG-CL-SM		
			1	1.5					
		0	1	1.5					
			1	1.5					
		0	1	1.5					
			1	1.5					
70		0	1	1			69.5 114.3		
					CH		70.0 FAT CLAY, (CH) 100% fines MHG-CH 113.8		

Bottom of borehole at 70.0 feet.

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Telephone: (303) 447-1823

BORING ID: SL 220N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.244 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251870.801 ft **EASTING** 2658561.923 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger		
5							5.0 / 178.2		
		14	2	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A	Surficial Deposits	Cement-Grout
			2	4					
			2	4					
		20	2	4					
			2	4					
	100	34	2	4					
			2	4					
		38	4	4					
			4	4					
10		43	4	4					6" Borehole
			4						
		28	4	4					
			4	4					
		46	2	4					
			2	4					
		132	2	4					
			2	4					
		30	2	4					
			2	4			14.0 / 169.2		
		110	3	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
15			3	5					
		104	4	5					
			4	5					
		120	4	5			16.5 / 166.7		
			3	3.5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		135	3	3.5					
			3	3.5	SM				
		133	3	3.5					
			3	3.5					
20		220	3	3.5					

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BORING ID: SL 220N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.244 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251870.801 ft **EASTING** 2658561.923 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	180	3	4	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B *(continued)*		Cement-Grout
		140	3	3.5			21.8 161.4		
		51	2	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		22	2	1					
		18	2	1					
25		29	2	1			26.1 157.1		
		32	2	2	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 10% gravel, 55% sand, 35% fines UHG-SM-CL		
		14	1	2			27.7 155.5		
		40	2	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		67	3	3			29.4 153.8		
30		5	1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B	Upper Hawthorn	6" Borehole
		6.3	1	3					
		8.1	1	3					
		8.2	1	3					
		6.9	1	3					
		4.5	1	3					
35		6.1	1	3					
		5.3	1	3					
		4.3	1	3					
		4.1	1	3					
40		4.1	1	3					

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BORING ID: SL 220N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.244 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251870.801 ft **EASTING** 2658561.923 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	4.2	1	3			SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B *(continued)*		
		3.8	1	3					Cement-Grout
		4.7	1	3					
		5.2	1	3	SM				
		4.3	1	3					
45		3.4	1	3					6" Borehole
		4.1	1	3					
		5	1	2.5			47.0 136.2 SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	
		5.1	1	2.5					
50		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5	SM				
55		0	1	2.5					4" Borehole
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
60		0	1	2.5					

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BORING ID: SL 220N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.244 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251870.801 ft **EASTING** 2658561.923 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	4" Borehole
			1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2			63.7	119.5	
		0	1	2	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SILTY, (CL/SM) 20% sand, 80% fines MHG-SM-CL		
65			1	2					
		0	1	2					
			1	2			66.4	116.8	
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL	MHG Clay	
			1	1					
		0	1	1					
			1	1					
		0	1	1			68.8	114.4	
			1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH		Cement-Grout
70		0	1	1			70.0	113.2	

Bottom of borehole at 70.0 feet.

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BORING ID: SL 220N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 184.017 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

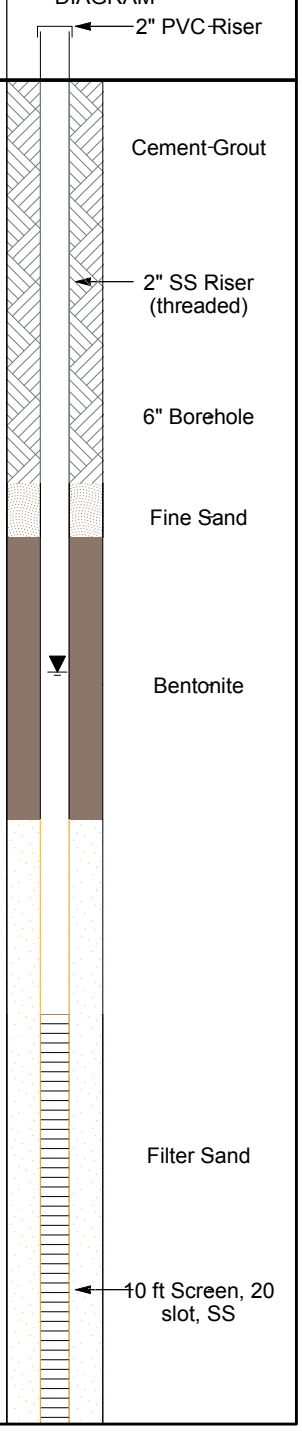
DRILLING METHOD Rotasonic **NORTHING** 251873.726 ft **EASTING** 2658641.281 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 186.017 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 6' NE of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0							No core, hand auger	Surficial Deposits
5							5.0 — 179.0	
		0.3	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
		1.2	1	5			6.8 — 177.2	
	100	0	1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	
10		0	1	3.5			10.0 — 174.0	
		8	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
		10	1	5			12.1 — 171.9	
		14	1	4	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	
		17	1	4				
15		32	2	4				
		38	2	4				
		81	2	4				
		84	4	4				
		160	4	4				
20		208	5	4				

WELL CONSTRUCTION DIAGRAM



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TETRA TECH
Tetra Tech
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Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 220N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 184.017 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251873.726 ft **EASTING** 2658641.281 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 186.017 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 6' NE of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	208	5	5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A *(continued)*	Surficial Deposits	Filter Sand
			5	4					
			5	2					
		508	5	2					
			5	2					
		186	5	2			22.7 161.3		
			4	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		135	3	1					
			5	1					
25		307	2	1			24.9 159.1		Bottom of screen at 23.9 ft bgs
			5	1.5	CL		LEAN CLAY, SANDY, (CL) 10% sand, 90% fines UHG-CL		
		159	5	1.5					
			5	1.5					
		100	4	1					
			4	1			27.5 156.5		
		36	2	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 60% sand, 30% fines UHG-SM-C		
			2	2			28.2 155.8		
		41	2	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			4	2					
30		54	4	2			29.8 154.2		
			2		SM		SILTY SAND WITH GRAVEL, (SM) 15% gravel, 55% sand, 30% fines UHG-SM-C	Upper Hawthorn	
		38	2	2					
			1	2					
		24	1	2					
			1	2					
		19	1	2			33.0 151.0		
			1	2					
		4	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-D		
			1	2.5					
		16	1	2.5					
35			1	2.5					
		2.6	1	2.5					
			1	2.5					
		1.9	1	2.5					
			1	2.5					
		1.9	1	2.5					
			1	2.5					
		0.2	1	2.5					
			1	2.5					
40		0.4	1	2.5					

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BORING ID: SL 220N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 184.017 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251873.726 ft **EASTING** 2658641.281 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 186.017 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 6' NE of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	0.3	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	2.5					
			1	2.5					
		0.2	1	2.5					
			1	2.5					
		0.3	1	2.5					
			1	2.5					
		0.1	1	2.5					
			1	2.5					
		0.1	1	2.5					
45			1	2.5					
		0	1	2.5					
			1	2.5					
		0.2	1	2.5					
			1	2.5					
		0.1	1	2.5					
			1	2.5					
		0.4	1	2.5					
			1	2.5					
		0.4	1	2.5					
50			1						
		2.7	1	2.5					
			1	2.5					
		0.9	1	2.5					
			1	2.5					
		0.5	1	2.5					
			1	2.5					
		0.4	1	2.5					
			1	2.5					
		0.4	1	2.5					
55			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
60		0	1	2.5					

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BORING ID: SL 220N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 184.017 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251873.726 ft **EASTING** 2658641.281 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 186.017 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 6' NE of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
65		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	2.5					
		0	1	1			67.0		
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL	MHG Clay	
70		0	1	1			70.0 114.0		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 220N 340E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/20/16 **COMPLETED** 11/20/16 **GROUND ELEVATION** 184.051 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251880.124 ft **EASTING** 2658687.789 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES Located in road

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	No Core	Cement-grout
5							5.0 — 179.1		
		0	1 1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	Surficial Deposits	
			1	3					
		0	1	3					
			1	3					
		0	1	3					
			1	3			8.0 — 176.1		
		0	1	3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM		
			1	3			9.0 — 175.1		
			1	4					
		0	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
10			1	4			10.0 — 174.1		
		0.5	1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4					
		0	1	4					
			1	4					
	100	0	1	3					
			1	4					
				4					
		0	1	4	SP				
			1	4					
		0	1	4					
15			1	4					4" Borehole
		0.3	1	4					
			1	4					
		0	1	4					
			1	4			17.0 — 167.1		
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0	1	5					
			1	5					
		0.4	1	5	SP				
			1	5					
		0.6	1	5					
20			1	5			20.0 — 164.1		

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BORING ID: SL 220N 340E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/20/16 **COMPLETED** 11/20/16 **GROUND ELEVATION** 184.051 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251880.124 ft **EASTING** 2658687.789 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES Located in road

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		0.3	1	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	Surficial Deposits	Cement-grout
			1	2					
			1	2					
		0.6	1	2					
			1	2					
		0.5	1	2					
			1	2			23.1		
		0	1	1.5	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 20% sand, 80% fines UHG-CH/SM	UHG Clay	
			1	1.5			24.4	159.7	
25		0.5	1	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM		
			1	1.5			26.0	158.1	
		1.7	1	1.5	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 20% sand, 80% fines UHG-CH/SM		
			1	1.5			27.1	157.0	
		1.7	1	1.5					
	100	1.6	1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
			1	2					
		1.7	1	2					
			1	2					
		1.7	1	2			29.6	154.5	
30			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		4" Borehole
		2.2	1	3					
			1	3					
		2	1	3					
			1	3					
		2.4	1	3					
			1	3					
		2	1	3					
			1	3					
		2.7	1	3					
35							35.0	149.1	

Bottom of borehole at 35.0 feet.

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BORING ID: SL 260N 140E

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CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/19/16 **COMPLETED** 11/19/16 **GROUND ELEVATION** 183.116 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251904.91 ft **EASTING** 2658463.23 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.116 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	2" PVC Riser
5							5.0 / 178.1		2" SS Riser (threaded)
		0	2 2 2	3.5 3.5	OL		ORGANIC SOIL WITH SAND, (OL) 40% sand, 60% fines Topsoil		Nominal 6" borehole
		0.7	3	3.5	SM		6.0 / 177.1 SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		Fine Sand Seal
	90	1	3 3 3	3.5 4 4	SP		6.7 / 176.4 POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		Bentonite
		0.6	3 3	4 4					
10							9.0 / 174.1		Cement-Grout
							9.5 / 173.6 No Recovery		
		0.8	4 4 4	4 4 4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		9.2	4 4	4 4					
		28	4 4 4	4 4 4					
		15	4 4	4 4					
		8	4 4	4 4					
15			3	5			14.5 / 168.6		
		9	3 2	5 5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		6/20 Filter Sand
		15	2 2	5 5					
	100	41	2 3	4 2.5			17.0 / 166.1 SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		45	2	2.5	SM				10 ft Screen, 20 slot, SS
			3	2.5					
20		63	3	2.5					

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BORING ID: SL 260N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/19/16 **COMPLETED** 11/19/16 **GROUND ELEVATION** 183.116 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251904.91 ft **EASTING** 2658463.23 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.116 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		85	3	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C *(continued)*		Bottom of screen at 20.6 ft bgs
			3	2.5					
			3	2.5					
		111	3	2.5			21.8 161.3		
			2	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	Bentonite
		30	2	1					
			3	1			23.1 160.0		
					SM		23.5 SILTY SAND, (SM) 75% sand, 25% fines UHG-SM 159.6		
		108	3	2					
			2	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL-SM		
			2	2			24.4 158.7		
25		39			GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	4" Borehole
			1						
		2.1	1	2					
			3	2			26.4 156.7		
		59	2	3			SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
			1	3					
		16	1	3					
			1	3					
		11	1	3					
			1	3					
		8.7	1	3					
30	100		1	2					
		7	1	3					
			1	3	SM				
		6.3	1	3					
			1	3					
		5.2	1	3					
			1	3					
		5.1	1	3					
			1	3					
		4.2	1	3					
35							35.0 148.1		

Bottom of borehole at 35.0 feet.

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BORING ID: SL 260N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.302 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251909.832 ft **EASTING** 2658510.987 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0		2.1	1	5	SP		ORGANIC SOIL, (SP) Topsoil 0.9 182.4	Surficial Deposits	Cement-Grout
	100		1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		14	1	4	SP		1.9 181.4		
			3				POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-A		
		42	3	4					
	100		3	4					
		59	3	4	SP				
5	100	55	3 3	4			5.0 178.3		
		140	3				No Recovery		
	40			4			8.0 175.3		
		45	3	4	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-A 8.8 174.5		
			5	4			POORLY GRADED SAND, (SP) 85% sand, 15% fines SA-SP-A		
10		75	5	4	SP		10.1 173.2		6" Borehole
			5		SP		10.5 POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-B 172.8		
		41	2	5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			2	3.5					
		26	2	3.5					
			2	3.5					
		32	2	3.5					
			2	3.5					
		35	2	3.5					
			2	3.5					
		183	2	3.5					
15			2	3.5	SM				
		88	2	3.5					
		205	2	3.5					
			2	3.5					
		70	2	3.5					
			2	3.5					
		79	2	3.5					
			2	3.5					
		140	2	3.5			19.4 163.9		
20		10	1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		

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BORING ID: SL 260N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.302 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251909.832 ft **EASTING** 2658510.987 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	10	1	4	CH		FAT CLAY, (CH) 100% fines UHG-CH *(continued)*	UHG Clay	Cement-Grout
			1	1			20.9 162.4		
			1	1			INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL/SM		
		88	2	1					
			1	1					
		27	1	1					
			1	1	CL/SM				
		4.2	1	1					
			1	1					
		4.4	1	1					
25			1	1			25.0 158.3		
		20	2	2			SILTY GRAVEL, (GM) 60% gravel, 20% sand, 30% fines UHG-GM		
			2	2	GM				
		20	2	2			26.8 156.5		
			2	2			SILTY SAND, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-A		
		30	2	2					
			2	2					
		18	2	2	SM				
			2	2					
		20	2	2					
30			2				30.0 153.3		6" Borehole
		2.4	1	2			SILTY SAND, (SM) 10% gravel, 65% sand, 25% fines UHG-SM-C	Upper Hawthorn	
			1	2					
		2	1	2					
			1	2					
		3.4	1	2					
			1	2					
		1.9	1	2					
			1	2					
		1	1	2					
35			1	2	SM				
		0.6	1	2					
			1	2					
		0.5	1	2					
			1	2					
		0.7	1	2					
			1	2					
		1	1	2					
			1	2					
		0.1	1	2					
40									

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BORING ID: SL 260N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.302 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251909.832 ft **EASTING** 2658510.987 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	0	1	2	SM		SILTY SAND, (SM) 10% gravel, 65% sand, 25% fines UHG-SM-C *(continued)*	Upper Hawthorn	Cement-Grout
45		0							6" Borehole
50		0							
55		0							4" Borehole
60	100	0							

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DRILLING METHOD Rotasonic **NORTHING** 251909.832 ft **EASTING** 2658510.987 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60		0	1	2	SM		SILTY SAND, (SM) 10% gravel, 65% sand, 25% fines UHG-SM-C *(continued)*	Upper Hawthorn	4" Borehole
			1	2					
			1	2					
		1.3	1	2					
			1	1.5					
		8	1	1.5	ML		SILT, (ML) 5% gravel, 20% sand, 75% fines UHG-ML-B		
			1	1.5					
		0.4	1	2					
			1	2					
65		0	1	2	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL-SM		
			1						
		0	1	2					
			1	2				MHG Clay	
		0	1	1					
			1	1					
	100	0	1	2					
			1	1	CL		LEAN CLAY, (CL) 100% fines UHG-CL		
		0	1	1					
			1	1					Cement-Grout
70		0	1	1					

61.6 121.7
63.0 120.3
66.2 117.1
70.0 113.3

Bottom of borehole at 70.0 feet.

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BORING ID: SL 260N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.873 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251905.495 ft **EASTING** 2658599.286 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.873 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 5' S of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									2" PVC Riser
	100	0	1 1 1	5 5 5	GM		GRAVELLY ORGANIC SOIL, GRAVELLY, (GM) 60% gravel, 25% sand, 15% fines CRUSHED LIMESTONE 1.0 / 182.9	Surficial Deposits	Cement-Grout
		0.5	1	5	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines SLAG 2.5 / 181.4		
	100	11	1 1	5 5	SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-B 4.0 / 179.9		2" SS Riser (threaded)
		0.5	1	5					
5	100	0.9	1 1	5 5	SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-A 5.0 / 178.9		
		0	1	5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-C 6.2 / 177.7		Nominal 6" borehole
	100	0	1 1	5 5	SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-A 7.5 / 176.4		Fine Sand Seal
		0.5	1	5					
	100	0	1 1	5 5	SM		SILTY SAND, (SM) 75% sand, 25% fines SA-SM-A 9.0 / 174.9		Bentonite Seal
10		6	1	5	SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-A 10.0 / 173.9		
		46	3 3	5 5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		55	3	5					
		58	3	5					
		82	3	5					
			3	5			14.3 / 169.6		
15		170	4	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		161	4	3.5					6/20 Filter Sand
		123	4	3.5					
		107	4	3.5					10 ft Screen, 20 slot, SS
		127	4	3.5					
20		201	4	3.5					

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BORING ID: SL 260N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.873 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251905.495 ft **EASTING** 2658599.286 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.873 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 5' S of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	247	4	5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B *(continued)*		
			4	3.5					
			4	3.5					
		136	3	3.5					
			3	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
			3	1					
			5	1				UHG Clay	
		38	2	1	CL		SANDY LEAN CLAY, (CL) 15% sand, 85% fines UHG-CL		
			2	1					
25		22	2	1					
			2	1					
		17	2	1					
			2	2	GC		SILTY GRAVEL WITH SAND, CLAYEY, (GC) 60% gravel, 20% sand, 20% fines UHG-GM/GC		
		52	2	2					
			2	2					
		56	2	2					
			4	2					
		32	2	2					
			2	2					
30		40	2	2	SM		SILTY SAND WITH GRAVEL, (SM) 5% gravel, 55% sand, 40% fines UHG-SM-C		
			2						
		4.9	2	2					
			2	2					
		3.6	2	2					
			2	2					
		4	2	2					
			2	2					
		2.1	2	2					
			2	2					
35		0	1	2					
			1	2					
		0.6	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2					
		2.3	1	2					
			1	2					
		1.8	1	2					
			1	2					
		1.1	1	2					
			1	2					
40		0.9	1	2				Upper Hawthorn	

21.2 — 162.7
23.0 — 160.9
25.6 — 158.3
28.5 — 155.4
30.7 — 153.2

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BORING ID: SL 260N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/3/16 **COMPLETED** 11/3/16 **GROUND ELEVATION** 183.873 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251905.495 ft **EASTING** 2658599.286 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.873 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 5' S of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	0.3	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*		
			1	2					
		2.3	1	2	SM				
			1	2					
		0.2	1	2					
			1	2			43.0 140.9		
		0	1	2			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 54% sand, 44% fines UHG-SM-C		
			1	2					
		0.2	1	2					
45			1	2					
		0	1	2					
			1	2					
		0.4	1	2					
			1	2					
		0.2	1	2					
			1	2					
		0.1	1	2					
			1	2					
50		0	1	2				Upper Hawthorn	
			1						
		0	1	2					
			1	2					
		0	1	2	SM				
			1	2					
		0	1	2					
			1	2					
		0	1	2					
55			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
60		0	1	2					

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DRILLING METHOD Rotasonic **NORTHING** 251905.495 ft **EASTING** 2658599.286 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.873 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 5' S of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 54% sand, 44% fines UHG-SM-C *(continued)*	Upper Hawthorn	
							63.0 — 120.9		
		0	1	2	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines MHG-SM-CL		
65							65.2 — 118.7		
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL	MHG Clay	
							69.5 — 114.4		
70		0	1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH		
							70.0 — 113.9		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 300N 220E

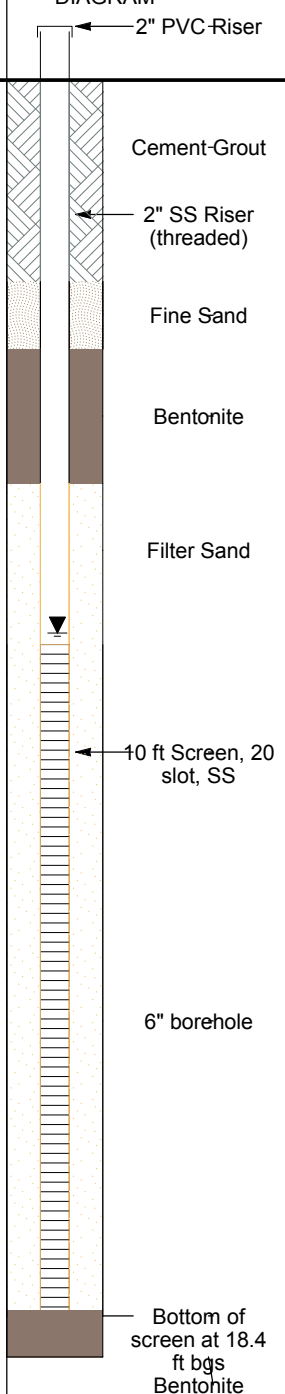
CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/17/16 **COMPLETED** 11/17/16
GROUND ELEVATION 183.368 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 251940.489 ft **EASTING** 2658548.508 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 185.368 (ft amsl) **Stickup** 2 ft
NOTES Borehole abandoned with grout, well offset 7.5' W of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0							No Core, hand auger	
5								
			4	0			6.0	
			4	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A	
			4	4				
	80	8.2	5	4				
			5	4				
		5.3	5	4				
			5	4				
10		7.1	5	4				
			5					
		1.1	5	4				
			5	4				
		3.4	5	4	SP			
			5	4				
		7.4	5	4				
			5	4				
		5.3	5	4				
			5	4				
15		7.3	5	4				
			5	4				
		121	5	4				
			5	4				
		19	5	4				
			5	4				
		60	4	4			17.5	
			4	3.5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	
		71	4	3.5	SM			
			4	3.5				
20		36	4	3.5				

177.4
165.9

Surficial Deposits

WELL CONSTRUCTION DIAGRAM



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BORING ID: SL 300N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 183.368 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251940.489 ft **EASTING** 2658548.508 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.368 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 7.5' W of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	51	3	4	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B *(continued)*		
		62	3	3.5					
		31	2	3.5					
		10	4	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		12	2	1					
25		45	3	1					
			3	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL/SM		
			1	1.5					
			2	1.5					
		45	2	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			3	2					
			3	2					
		28	4	2					
			3	2					
		43	2	2					
			2	2					
30		36	4	2					
			1						
			1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	
			1	2.5					
		1.5	1	2.5					
			1	2.5					
		2.3	1	2.5					
			1	2.5					
		2.1	1	2.5					
			1	2.5					
		1.9	1	2.5					
35			1	2.5					
		2.4	1	2.5					
			1	2.5					
		1.8	1	2.5					
			1	2.5					
		3.3	1	2.5					
			1	2.5					
		1.2	1	2.5					
			1	2.5					
40		3.5	1	2.5					

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BORING ID: SL 300N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 183.368 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251940.489 ft **EASTING** 2658548.508 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.368 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 7.5' W of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	3.1	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	2.5					
			1	2.5					
			1	2.5					
		1.9	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		1.5	1	2.5					
			1	2.5					
		0	1	2.5					
45			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
50		0	1	2.5					
			1						
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
55			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
60		0	1	2.5					

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DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 183.368 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251940.489 ft **EASTING** 2658548.508 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.368 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 7.5' W of borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	2.5					
		0	1	2.5					
			1	2.5			62.3 — 121.1		
		0	1	1.5	SM-CL		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), SANDY, (SM-CL) 30% sand, 70% fines UHG-CL-SM		
			1	1.5					
		0	1	1.5			64.2 — 119.2		
			1	1.5					
65		0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5			65.4 — 118.0		
		0	1	1	CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL) 20% sand, 80% fines MHG-CL/SM	MHG Clay	
			1	1					
		0	1	1			66.9 — 116.5		
			1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
		0	1	1					
			1	1			68.7 — 114.7		
		0	1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH		
			1	1					
70		0	1	1			70.0 — 113.4		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 300N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/4/16 **COMPLETED** 11/4/16 **GROUND ELEVATION** 183.447 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251955.11 ft **EASTING** 2658633.126 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.447 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0							No core, hand auger	Surficial Deposits
5							5.0 178.4	
							No Recovery	
							6.5 176.9	
		6	1	5				
			1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
	70	3	1	5			7.7 175.7	
			1	4	SP		POORLY GRADED SAND, (SP) 85% sand, 15% fines SA-SP-A	
		8.6	1	4			8.9 174.5	
			1	3.5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	
10		0.5	1	3.5	SM			
			1					
		2.4	1	3.5			10.9 172.5	
			1	3.5			SILTY SAND, (SM) 75% sand, 25% fines SA-SM-B	
		3.7	1	3.5	SM			
			1	3.5			12.5 170.9	
		5.4	1	3.5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
			1	5				
		6.2	1	5				
			1	5				
		9.5	1	5				
15			1	5	SP			
		19	1	5				
			1	5				
		27	1	5				
			1	5			17.1 166.3	
		22	2	3.5			SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	
			2	3.5				
		34	2	3.5	SM			
			3	3.5				
20		56	3	3.5				

WELL CONSTRUCTION DIAGRAM

2" PVC Riser
Cement-Grout
2" SS Riser (threaded)
6" borehole
Fine Sand
Bentonite
Filter Sand
10 ft Screen, 20 slot, SS

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Telephone: (303) 447-1823

BORING ID: SL 300N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/4/16 **COMPLETED** 11/4/16 **GROUND ELEVATION** 183.447 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251955.11 ft **EASTING** 2658633.126 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.447 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	85	95	3	3.5	SM		20.4 163.0 SILTY SAND, (SM) 75% sand, 25% fines SA-SM-B	Surficial Deposits	Botttom of screen at 21.0 ft bgs
			3	3.5					
			4	3.5					
		125	4	3.5					
			4	3.5	SM				
		100	4	3.5					
			4	3.5					
		89	3	3.5			23.5 159.9		
			1	1	CL		23.8 159.6 SANDY LEAN CLAY, (CL) 20% sand, 80% fines UHG-CL	UHG Clay	
					CH		24.1 159.3 FAT CLAY, (CH) 100% fines UHG-CH		
		53	4	1	CL		24.4 159.0 SANDY LEAN CLAY, (CL) 20% sand, 80% fines UHG-CL		
25					CH		24.8 158.6 FAT CLAY, (CH) 100% fines UHG-CH		
			1	1	CL		25.1 158.3 SANDY LEAN CLAY, (CL) 20% sand, 80% fines UHG-CL		
		116	4	2					
			1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			4	2					
			1	2			27.0 156.4 No Recovery		
30									
								Upper Hawthorn	
35									
		45	3	0			36.5 146.9		
			3	2			SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
		15	3	2					
			3	2	ML				
		11	3	2					
			3	2					
		2.9	1	2					
40									

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BORING ID: SL 300N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/4/16 **COMPLETED** 11/4/16 **GROUND ELEVATION** 183.447 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251955.11 ft **EASTING** 2658633.126 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.447 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	68	15	1	2	SM		40.1 / SILTY SAND WITH GRAVEL, (SM) 10% gravel, 65% sand, 25% fines UHG-SM-D / 143.3	Upper Hawthorn	
		16							
		7.8							
		7.6							
		2.8							
45		2.7							
		1.7							
		3.4							
		2.5							
		0.4							
50		1							
		0							
		1							
		0							
55		0							
		0							
		0							
60		0							

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DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251955.11 ft **EASTING** 2658633.126 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 185.447 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 65% sand, 25% fines UHG-SM-D *(continued)*	Upper Hawthorn	
		0.5	1	2					
		0.1	1	2					
		0.1	1	2			63.5		
65		0	1	2	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines MHG-CL/SM	MHG Clay	
		0	1	2					
		0	1	2			66.5		
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
		0	1	1					
		0	1	1			69.5		
70		0	1	1	CH		70.0 FAT CLAY, (CH) 100% fines MHG-CH		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 300N 340E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/19/16 **COMPLETED** 11/19/16
GROUND ELEVATION 181.268 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 251953.624 ft **EASTING** 2658679.681 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 183.268 (ft amsl) **Stickup** 0 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									Flush Mount
							No core, hand auger		
5							5.0 176.3		2" SS Riser (threaded)
		0.8	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		6" borehole
			1	4					
		0	1	4					
			1	4			7.2 174.1		
	100	0	1	3.5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5					
		0.7	1	5					
			1	5					
10		1.2	1	5					Cement-Grout
			1						
		0	1	5					
			1	5					
		0.6	1	5	SP			Surficial Deposits	
			1	5					
		0	1	5					
			1	5					
		0	1	5					
			1	5					
		0	1	5					
15	100		1	5			15.4 165.9		
		0	1	3.5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			1	3.5					
		1.2	1	3.5					
			1	3.5					
		1.8	1	3.5	SM				
			1	3.5					
		1.1	1	3.5					
			1	3.5					
20		4.7	1	3.5					

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BORING ID: SL 300N 340E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/19/16 **COMPLETED** 11/19/16 **GROUND ELEVATION** 181.268 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251953.624 ft **EASTING** 2658679.681 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 183.268 (ft amsl) **Stickup** 0 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		1.8	1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B *(continued)*		
			1	3.5					
		3.8	1	3.5			21.8 159.5		
			3	1	CH		22.2 FAT CLAY, (CH) 100% fines UHG-CH 159.1	UHG Clay	
		2	1	1.5	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 30% sand, 70% fines UHG-CH/SM		
			1	1.5			23.0 158.3		
		1.3	3	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
			3	1			24.0 157.3		Fine Sand Seal
		1.4	1	1.5			INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 30% sand, 70% fines UHG-CH/SM		
25			1	1.5					Bentonite Seal
		2.7	3	1.5	CH/SM				
			1	1.5			26.4 154.9		
		5.5	3	2			SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			3	2					
	100	67	3	3.5					
			3	2	GM				10 ft Screen, 20 slot, SS
		49	3	2					
			4	2					
		153	4	2			29.5 151.8		
30			2	2.5			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	
		108	2	2.5					
			2	2.5					
		68	2	2.5	SM				
			1	2.5					Filter Sand
		30	1	2.5					
			1	2.5			33.1 148.2		
		26	1	1.5			SANDY SILT, CLAYEY, (ML) 100% fines UHG-ML-B		
			1	1.5	ML				
35		25	1	1.5			35.0 146.3		
							Not cored		Screen below coring depth
							39.8 141.5		Bottom of screen at 39.8 ft bgs

Bottom of borehole at 39.8 feet.

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BORING ID: SL 340N 140E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/19/16 **COMPLETED** 11/19/16
GROUND ELEVATION 182.677 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 251989.65 ft **EASTING** 2658474.773 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 184.677 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0							No core, hand auger	
5							5.0 / 177.7	
		0.8	1	3.5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	Surficial Deposits
			1	3.5				
		0.8	1	3.5				
			1	3.5			7.0 / 175.7	
		0.9	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
			1	5				
		0.7	1	5				
			1	5				
10		0.8	1	5			10.0 / 172.7	
			1	5	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A	
		0.7	1	4				
			1	4				
		0.9	1	4				
			1	4				
	100	0.8	1	3.5				
			1	4				
			4					
		2.3	1	4				
			1	4				
		1.7	1	4				
15			1	4				
		0.9	1	4			15.5 / 167.2	
			1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
		2.1	1	5			16.5 / 166.2	
			1	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	
		1.8	1	2.5				
			1	2.5				
		6	1	2.5				
			1	2.5				
20		6.1	1	2.5			20.0 / 162.7	

WELL CONSTRUCTION DIAGRAM
2" PVC Riser
2" SS Riser (threaded)
6" Borehole
Cement-Grout

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Telephone: (303) 447-1823

BORING ID: SL 340N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/19/16 **COMPLETED** 11/19/16 **GROUND ELEVATION** 182.677 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251989.65 ft **EASTING** 2658474.773 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.677 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20							No Recovery		
							22.0 160.7		
		0	1	3.5			SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3.5					6" Borehole
		0.3	1	3.5	SM				
			1	3.5					
		1	1	3.5					
25			1	3.5			25.0 157.7		Cement-Grout
		1.1	1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5	SP				
		1	1	5					
			1	5			27.2 155.5		
		93	2	2.5			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			2	2.5	SM				
		132	2	2.5					
			2	2.5			29.3 153.4		
		60	2	1			FAT CLAY, (CH) 0% sand, 100% fines UHG-CH	Surficial Deposits	
30			1	1	CH				
	90	28	1	1					Fine Sand Seal
			1	1			31.1 151.6		
		52	2	1.5			FAT CLAY WITH SAND, (CH/SM) 30% sand, 70% fines UHG-CH/SM		
			2	1.5	CH/SM				Bentonite Seal
		33	2	1.5					
			2	1.5			33.3 149.4		
		38	2	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A	UHG Clay	
			2	2	SM				6/20 Filter Sand
		123	4	2					
35			4	2			35.0 147.7		
		146	2	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			3	2			36.0 146.7		
		112	2	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			2	2					10 ft Screen, 20 slot, SS
		86	2	2					
			2	2	SM				
		89	3	2					
			2	2					
		57	2	2					
40							40.0 142.7	Upper Hawthorn	

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/19/16 **COMPLETED** 11/19/16 **GROUND ELEVATION** 182.677 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251989.65 ft **EASTING** 2658474.773 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.677 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40		80	2 2	2.5			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	6/20 Filter Sand
		11	1 1	2.5 2.5					
		7.6	1 1	2.5 2.5					
		8.7	1 1	2.5 2.5					
		9.1	1 1	2.5 2.5					
45	100	9.5	1 1 1	2 2.5 2.5 2.5	SM				Bottom of screen at 45.0 ft bgs
		8.7	1 1	2.5 2.5					Borehole collapse
		9	1 1	2.5 2.5					
		10.1	1 1	2.5 2.5					
50		12.9	1	2.5			50.0 132.7		

Bottom of borehole at 50.0 feet.

ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:25 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ

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BORING ID: SL 340N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 186.765 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251996.722 ft **EASTING** 2658531.596 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.765 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0		59	2	5	SP		SILTY SAND, GRAVELLY, (SP) 10% gravel, 80% sand, 10% fines	Surficial Deposits	2" PVC Riser; Cement-Grout
			2	5					
		74	2	5					
			2	5					
		108	2	5					
			2	5					2" SS Riser (threaded)
		63	2	5					
			2	5					
		26	2	5					
			2	5			4.5 182.3		
5	90		2	4	GM		GRAVEL, (GM) 60% gravel, 30% sand, 10% fines SA-GM 5.0 181.8		6" Borehole
							No Recovery 6.0 180.8		
		2.7	2	3.5	SW		SILTY SAND, GRAVELLY, (SW) 20% gravel, 50% sand, 30% fines SA-SC		
			2	3.5					
		6.3	2	3.5					
			2	3.5					
		23	2	3.5					
			2	3.5			9.2 177.6		
10		13	2	5	GP		POORLY GRADED GRAVEL WITH SAND, (GP) 60% gravel, 30% sand, 10% fines SA-GP 10.0 176.8		
			1						
		0.3	1	2.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	2	2.5			12.5 174.3		
			2	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		4.3	2	2.5					
			2	2.5			14.3 172.5		
		2.7	2	5	SP		POORLY GRADED SAND, (SP) 5% fines SA-SP-B		
15			2	5					
		55	2	5					
			2	5					
		70	2	5					
			2	5					
		61	2	5					
			3	5					
		59	3	5					
			3	5					
		117	3	5					
20							19.9 166.9		

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BORING ID: SL 340N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 186.765 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251996.722 ft **EASTING** 2658531.596 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.765 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	389	4	5	SM		SILTY SAND, (SM) 30% fines SA-SM-B *(continued)*	Surficial Deposits	Cement-Grout
			4	3.5					
			4	3.5					
		148	3	3.5					
			3	3.5					
		382	3	3.5					
			3	3.5					
		70	3	3.5					
			3	3.5					
		245	3	3.5					
25			2	1	CH		24.8 / 25.0 FAT CLAY, (CH) 100% fines UHG-CH 162.0 / 161.8	UHG Clay	
		16	2	1	CL/SM		25.3 FAT CLAY WITH SAND, (CL/SM) 30% sand, 70% fines UHG-CL-SM 161.5		
			2	1	CH		26.1 FAT CLAY, (CH) 100% fines UHG-CH 160.7		
		23	2	1.5	SM-CL		FAT CLAY WITH SAND, (SM-CL) 30% sand, 70% fines UHG-CL-SM 27.3 / 159.5		
		22	2	1	CH		27.5 FAT CLAY, (CH) 100% fines UHG-CH 159.3		Fine Sand Seal
			2	1.5	CH/SM		FAT CLAY WITH SAND, (CH/SM) 30% sand, 70% fines UHG-CL-SM		
		16	2	1.5			28.6 158.2		
			2	1.5	SM		FAT CLAY WITH SAND, (SM) 30% sand, 70% fines UHG-CL-SM		Bentonite Seal
30		33	2	1.5			30.0 156.8		
			5		GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
		130	2	2					6/20 Filter Sand
			2	2					
		57	2	2					
			2	2					
		90	2	2			32.6 154.2		
			2	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
		45	2	3					
			5	3			34.0 152.8		10 ft Screen, 20 slot, SS
35		285	5	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
			5	2					
		420	4	2					
			4	2					
		363	4	2					
			4	2.5			37.0 149.8		
		140	4	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			2	2.5					
		20	2	2.5					
			2	2.5					
40		23	4	2.5					

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BORING ID: SL 340N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 186.765 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251996.722 ft **EASTING** 2658531.596 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.765 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	40	2	1.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*	Upper Hawthorn	Bottom of screen at 42.9 ft bgs
			2	2.5					
			2	2					
		37	2	2					
			2	2					
		25	2	2					
			2	2					
		14	2	2					
			2	2					
		5.9	1	2					
45			1	2					
		16	1	2					
			1	2					
		11	1	2					
			1	2					
		5.2	1	2					
			1	2					
		3.3	1	2					
			1	2					
		4	1	2					
50			1						
		2.1	1	2					
			1	2					
		0.5	1	2					
			1	2					
		0.6	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
55			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
60			1	2					

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DRILLING METHOD Rotasonic **NORTHING** 251996.722 ft **EASTING** 2658531.596 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.765 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.5' E of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*	Upper Hawthorn	
		0	1	2					
		0	1	2					
		0	1	2					
		0	1	2					
		0	1	2					
		0	1	2					
65		0	1	2					
		0	1	2					
		0	1	2					
		0	1	2					
		0	1	2					
		0	1	2					

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BORING ID: SL 340N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 185.506 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251996.122 ft **EASTING** 2658603.252 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 187.506 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	2" PVC Riser
5							5.0 / 180.5		Cement Grout
		0.4	1	5	GM		5.5 / 180.0 SILTY GRAVEL WITH SAND, (GM) 60% gravel, 25% sand, 15% fines ROAD BASE		2" SS Riser (threaded)
			1	5			SILTY SAND, (SM) 95% sand, 5% fines		6" Borehole
		0.7	1	5	SM				
			1	3.5			7.2 / 178.3		
	100	1.2	1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-A		Fine Sand Seal
			1	5	SP				
		0.8	1	5			8.8 / 176.7		Bentonite Seal
			1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
10		3.2	1	4	SP		10.0 / 175.5		
			1				POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-B		6/20 Filter Sand
		2.3	1	5					
			1	5					
		12	1	5					
			1	5					
		12	1	5	SP				
			1	5					10 ft Screen, 20 slot, SS
		4.5	1	5					
			1	5					
		15	1	5			14.7 / 170.8		
15			1	2.5			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		12	1	2.5					
			1	2.5					
		16	2	2.5					
			2	2.5					
		54	5	2.5	SM				
			5	2.5					
		38	5	2.5					
			5	2.5					
		57	5	2.5					
20									

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BORING ID: SL 340N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 185.506 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251996.122 ft **EASTING** 2658603.252 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 187.506 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	50	34	5	4	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C *(continued)*	Surficial Deposits	Bottom of screen at 22.0 ft bgs
			5	2.5					
			5	2.5					
		40	5	2.5					
			5	2.5			22.2 163.3		
		29	3	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL/SM	UHG Clay	
			3	1.5			23.3 162.2		
		32	4	1	CH		23.6 FAT CLAY, (CH) 100% fines UHG-CH 161.9		
			5	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL/SM		
		18	2	1			24.4 161.1		
25					CH		24.8 FAT CLAY, (CH) 100% fines UHG-CH 160.7		
			2	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
		14	2	2					
			2	2			26.5 159.0		
		14	3	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		48	3	2			27.5 158.0		
		87	5	2	SM		SILTY SAND, GRAVELLY, (SM) 10% gravel, 70% sand, 30% fines UHG-SM-B		
		11	2	3			28.6 156.9		
			2	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
		28	2	3					
30			3	3			30.0 155.5		
			2				No Recovery	Upper Hawthorn	
35							36.0 149.5		
		0.8	1	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
			1	2			37.0 148.5		
		0.1	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2					
		0.1	1	2					
			1	2					
		0	1	2					
40									

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BORING ID: SL 340N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 185.506 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251996.122 ft **EASTING** 2658603.252 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 187.506 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	70	1.6	1	3			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*		
			1	2					
			1	2					
		1.6	1	2					
			1	2					
		2	1	2					
			1	2	SM				
		2.2	1	2					
			1	2					
		1.7	1	2					
45			1	2					
		1.8	1	2					
			1	2			46.0 139.5		
		1.6	1	2.5			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5					
		1.6	1	2.5					
			1	2.5					
		1.8	1	2.5					
			1	2.5					
		1.4	1	2.5					
50			1						
		0.5	1	2.5					
			1	2.5					
		0.1	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5	SM				
		0	1	2.5					
			1	2.5					
		0	1	2.5					
55			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
60			1	2.5					

Upper Hawthorn

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BORING ID: SL 340N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 185.506 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 251996.122 ft **EASTING** 2658603.252 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 187.506 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5			63.6 121.9		
			1	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A 64.2 121.3		
		0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 70% sand, 30% fines UHG-SM-D 65.2 120.3		
65			1	2.5					
		0	1	2	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SILTY, (CL/SM) 20% sand, 80% fines MHG-CL/SM 66.4 119.1	MHG Clay	
			1	2					
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
			1	1					
		0	1	1					
			1	1					
		0	1	1					
			1	1			69.1 116.4		
70		0	1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH 70.0 115.5		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 380N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 182.67 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252030.141 ft **EASTING** 2658486.638 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0		0	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	Surficial Deposits	Cement-Grout
			1	5					
		0	1	5					
			1	5					
		0	1	5					
			1	5			3.0 / 179.7		
		0	1	3.5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3.5					
		0	1	3.5					
5			1	3.5			5.0 / 177.7		
							No Recovery		
							7.5 / 175.2		
	100	0	1	3.5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3.5					
		0	1	3.5			8.6 / 174.1		
			1	3.5	SM		SILTY SAND, (SM) 75% sand, 25% fines SA-SM-B		
		0.2	1	3.5			9.8 / 172.9		
10			1	5	SP		POORLY GRADED SAND, (SP) 98% sand, 2% fines SA-SP-B		6" Borehole
		0	1	5			10.6 / 172.1		
			1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		0	1	3.5					
			1	3.5					
		0.8	1	3.5			12.9 / 169.8		
			1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		11	1	3.5					
			1	3.5					
		14	1	3.5					
15			1	3.5					
	100	13	1	3.5					
			1	3.5			16.3 / 166.4		
		15	1	5	SP		16.8 / 165.9 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		25	1	2.5					
			1	2.5					
		21	1	2.5					
			1	2.5					
20		32	2	2.5			20.0 / 162.7		

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TETRA TECH
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Telephone: (303) 447-1823

BORING ID: SL 380N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 182.67 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252030.141 ft **EASTING** 2658486.638 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20			2	2.5					
		12	2	0	SM		SILTY SAND, (SM) 65% sand, 35% fines SA-SM		
							20.8 — 161.9		
			2	1			FAT CLAY, (CH) 100% fines UHG-CH		
		6.1	2	1	CH				
			2	1			22.2 — 160.5		
		4.2	2	1.5			INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM		
			2	1.5	SM-CL				
		24	2	1.5			23.9 — 158.8		
			1	1	CH		24.2 — 158.5 FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		1.9	1	1			SANDY LEAN CLAY, (CL) 2% gravel, 20% sand, 78% fines UHG-CL		
25			1	1					
	100				CL				Cement-Grout
		5.4	1	1					
			1	1			26.2 — 156.5		
		9.3	3	4			SILTY SAND WITH GRAVEL, (SW) 25% gravel, 40% sand, 35% fines UHG-SM-A		
			1	2	SW				
		13	1	2					
			1	2			28.4 — 154.3		
		179	3	2	GW		28.6 — 154.1 SANDY GRAVEL, (GW) 70% gravel, 25% sand, 5% fines UHG-GW		
			2	2					
		40	2	2	SW		SILTY SAND WITH GRAVEL, (SW) 25% gravel, 40% sand, 35% fines UHG-SM-A		
30			1	2			30.0 — 152.7		
		4.3	1	2			SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-A		6" Borehole
			1	2					
		5.4	1	2	SM				
			1	2					
		12.3	1	2			32.9 — 149.8		
			1	2			SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-A		
		13.4	1	2					
			1	2	SM				
		4.2	1	2					
35			1	2					
	100								
		32	2	2			35.7 — 147.0	Upper Hawthorn	
			1	2			SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		22	1	2	GM				
			1	2					
		22	1	2			37.7 — 145.0		
			1	2			SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-A		
		23	1	2					
			1	2	SM				
			1	2					
40							40.0 — 142.7		

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BORING ID: SL 380N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 182.67 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252030.141 ft **EASTING** 2658486.638 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40							No Recovery		Cement-Grout
45	100								6" Borehole
		12.1	2	2			46.4		
			2	2			SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-A		
		0.5	2	2					
			2	2	SM				
		7.1	2	2					
			2	2					
50		4.1	2	2			50.0		
			2	2			132.7		
		22	1	2			SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-C	Upper Hawthorn	
			1	2					
		33	1	2					
			1	2					
		11	1	2					
			1	2					
		0.2	1	2					
			1	2					
		0	1	2					
55	100		1	2	SM				4" Borehole
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
60		0	1	2					

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DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252030.141 ft **EASTING** 2658486.638 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60			1	2					
		0	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 5% gravel, 65% sand, 30% fines UHG-SM-C *(continued)*		
			1	2			61.2 121.5		
		0	1	1			LEAN CLAY, SILTY, (CL) 0% gravel, 0% sand, 100% fines MHG-CL	MHG Clay	4" Borehole
			1	1					
		0	1	1					
			1	1	CL				
		0	1	1					Cement-Grout
			1	1					
		0	1	1					
65	100						65.0 117.7		

Bottom of borehole at 65.0 feet.

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BORING ID: SL 380N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 186.263 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252031.604 ft **EASTING** 2658522.697 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger		
5									Cement-Grout
			1	4			6.0 180.3		
		0	1	4	SW		WELL GRADED SAND WITH SILT AND GRAVEL, (SW) 15% gravel, 80% sand, 5% fines Grass, organic matter, concrete		
			1	4			7.0 179.3		
		0	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4			8.0 178.3		
							No Recovery		
							9.0 177.3		
		0	1	4	SP		POORLY GRADED SAND, GRAVELLY, (SP) 15% gravel, 80% sand, 5% fines SA-SP/G Road base mixed into SA-SP-A	Surficial Deposits	
10			1	4			10.0 176.3		
		0	1	5	SP		10.5 POORLY GRADED SAND, SILTY, (SP) 88% sand, 12% fines SA-SP-A 175.8		
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0	1	5	SP				
			1	5					
	93	0	1	5			12.7 173.6		
			1	2			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		0	1	2					
			1	2					
		0	1	2	SM				
15			1	2					4" Borehole
		0	1	2					
			1	2			16.0 170.3		
		1.5	1	2			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	2	SP				
		2.6	1	2					
			1	2			18.0 168.3		
		3.1	1	2			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			1	2	SM				
20		3.8	1	2			20.0 166.3		

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BORING ID: SL 380N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 186.263 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252031.604 ft **EASTING** 2658522.697 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20			1				No Recovery		
							21.8 / 164.5		
			1	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-SM/CL	UHG Clay	
		2	1	1.5					
			1	1.5			23.2 / 163.1		
		2.1	1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
			3	1			24.1 / 162.2		
		2	1	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-SM/CL		
25			1	1.5					Cement-Grout
		2.3	1	1.5					
			1	1.5					
		5	1	1.5					
			1	1.5					
		2.1	1	1.5					
			2	1.5			28.1 / 158.2		
		107	3	2	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
			2	2					
		45	2	2			30.0 / 156.3		
30	91		2	2					
		81	2	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	3					
		9.2	1	3					
			1	3					
		12	1	3					
			1	3					
		101	3	3					
			3	3					
		106	2	3					
35			2	3					4" Borehole
		32	2	3					
			1	3					
		16	1	3					
			1	3					
		11	1	3					
			1	3					
		16	1	3					
			1	3					
		11	1	3					
40							40.0 / 146.3		

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Telephone: (303) 447-1823

BORING ID: SL 380N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 186.263 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252031.604 ft **EASTING** 2658522.697 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40			1						
		2.3	1	3			SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	4" Borehole
			1	3					
		2.3	1	3					
			1	3					
	100	3.4	1	3	SM				
			1	3					
		3.8	1	3					
			1	3					
45		5.2	1	3			45.0 141.3		

Bottom of borehole at 45.0 feet.

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Telephone: (303) 447-1823

BORING ID: SL 380N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 186.641 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252039.617 ft **EASTING** 2658557.797 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.641 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.6' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	2" PVC Riser
5							5.0 / 181.6		Cement-Grout
		0.6	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		2" SS Riser (threaded)
			1	4					
		1.2	1	4			6.8 / 179.8		6" Borehole
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
	100	0.5	1	4					
			1	5					
		0.4	1	5					
			1	5					
10		0.5	1	5					
			1						
		0	1	5	SP				
			1	5					
		0	1	5					
			1	5					
		0	1	5					
			1	5					
			1	5			14.3 / 172.3		
		0.2	1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
15			1	4					
		0.2	1	4					
			1	4	SP				
		0.4	1	4					
			1	4					
		0.7	1	4			17.8 / 168.8		
			1	3.5	SM		18.3 SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B 168.3		
		5.2	1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5	SP				
		5.7	1	5					
20							20.0 / 166.6		

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BORING ID: SL 380N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 186.641 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252039.617 ft **EASTING** 2658557.797 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.641 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.6' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	4.9	1	5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	Surficial Deposits	Cement-Grout
		3.4							
		3.8					22.7 163.9		
		3			CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
25		4.3					25.5 161.1		
		4			CL		SANDY LEAN CLAY, (CL) 100% fines UHG-CL		Fine Sand Seal
		2							
		1							
		11					29.0 157.6		Bentonite Seal
30		0.1	3	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL/SM		
		20	5				30.0 156.6		
		85	5	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A	Upper Hawthorn	6/20 Filter Sand
		62	5	2					
		59	5	2					
		37	5	2					
35		39	4	2					10 ft Screen, 20 slot, SS
		15	1	2					
		14	1	2					
		9.5	1	2					
		18	1	2			38.5 148.1		
40		6.9	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		

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LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.641 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.6' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	11	1	1.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*	Upper Hawthorn	
			1	2			41.0		
			1	2			145.6		
		12	1	2			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5					
		9	1	2.5					
			1	2.5					
		2	1	2.5					
			1	2.5					
		2.3	1	2.5					Bottom of screen at 44.1 ft bgs
45			1	2.5					
		17	1	2.5					
			1	2.5					
		19	1	2.5					
			1	2.5					
		1.8	1	2.5					
			1	2.5					
		1.9	1	2.5					
			1	2.5					
		2.7	1	2.5					
50			1						
		5	1	2.5	SM				
			1	2.5					
		1.2	1	2.5					
			1	2.5					
		1.2	1	2.5					
			1	2.5					
		0.9	1	2.5					
			1	2.5					
		0.4	1	2.5					
55			1	2.5					
		0.4	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
60		0	1	2.5					

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TETRA TECH
Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 380N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 186.641 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252039.617 ft **EASTING** 2658557.797 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.641 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 8.6' N of borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0.2	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
		0							
		0.1							
		0							
65		0							
		0							
		0					66.6 120.0		
		0			CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines MHG-CL/SM		
		0					67.7 118.9		
		0			CL		LEAN CLAY, SILTY, (CL) 0% sand, 100% fines MHG-CL	MHG Clay	
70		0					70.0 116.6		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 380N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 182.874 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252029.922 ft **EASTING** 2658637.217 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	Cement-Grout
5							5.0 — 177.9		
		0	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5					
		0	1	5			6.8 — 176.1		
			1	5	SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-B		
	100	1	1	5			7.8 — 175.1		
			1	5	SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-B		
		0	1	5					
			1	5					
10		0	1	5			10.0 — 172.9		6" Borehole
			1		SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		2	1	5					
			1	5					
		2.4	1	5					
			1	5					
		8	1	5					
			1	5					
		18	1	5					
			1	5					
		8.5	1	5					
15			1	5					
		16	1	5					
			1	5			16.4 — 166.5		
		25	1	2.5	SM		SILTY SAND, (SM) 75% sand, 25% fines SA-SM-C		
			1	2.5					
		11	1	2.5					
			1	2.5					
		12	1	2.5					
			1	2.5					
20		11	1	2.5					

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BORING ID: SL 380N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 182.874 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252029.922 ft **EASTING** 2658637.217 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	13	1	5	SM		SILTY SAND, (SM) 75% sand, 25% fines SA-SM-C *(continued)*		Cement-Grout
			1	2.5					
			1	2.5					
				2.5			21.2 161.7		
		3.8	3	1	CL		SANDY LEAN CLAY, (CL) 10% sand, 90% fines UHG-CL 21.7 161.2	UHG Clay	
			1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
		6.4	1	1					
			1	1			23.3 159.6		
		7.1	1	1	CL		SANDY LEAN CLAY, (CL) 10% sand, 90% fines UHG-CL		
			1	1					
		9.3	1	1					
25			1	1			25.4 157.5		
		17	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
		25	1	2			26.4 156.5		
		38	3	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			3	2					
		130	3	2					
			3	2			28.5 154.4		
		26	3	2	SM		SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-B		
			2	3					
30		6.5	2	3					6" Borehole
			2				31.0 151.9		
		10	2	3					
			2	3					
		17	1	1.5	SM		SANDY SILT, CLAYEY, (SM) 5% gravel, 70% sand, 25% fines UHG-SM	Upper Hawthorn	
			1	1.5					
		21	1	1.5					
			1	1.5					
		21	1	1.5					
			1	1.5					
		22	1	1.5					
35			1	1.5					
		7	1	1.5					
			1	1.5					
		9.4	1	1.5					
			1	1.5					
		11	1	1.5					
			1	1.5					
		7.3	1	1.5					
			1	1.5					
40		6	1	1.5					

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BORING ID: SL 380N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 182.874 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252029.922 ft **EASTING** 2658637.217 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	7.5	1	3	SM		SANDY SILT, CLAYEY, (SM) 5% gravel, 70% sand, 25% fines UHG-SM *(continued)*	Upper Hawthorn	Cement-Grout
			1	1.5					
			1	1.5					
		6.8	1	1.5					
			1	1.5					
		3.1	1	1.5					
			1	1.5					
		3.6	1	1.5					
			1	1.5					
		3.3	1	1.5					
45			1	1.5					6" Borehole
		2.1	1	1.5					
			1	1.5					
		1.9	1	1.5					
			1	1.5					
		4.2	1	1.5					
			1	1.5					
		7	1	1.5					
			1	1.5					
		4.3	1	1.5					
50			1						
		25	1	1.5					
			1	1.5					
		16	1	1.5					
			1	1.5					
		10	1	1.5					
			1	1.5					
		26	1	1.5					
			1	1.5					
		30	2	1.5					
55			1	1.5					4" Borehole
		35	3	1.5					
			1	1.5					
		21	1	1.5					
			1	1.5					
		26	1	1.5					
			1	1.5					
		8	1	1.5					
			1	1.5					
		5.6	1	1.5					
60									

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BORING ID: SL 380N 300E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 182.874 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252029.922 ft **EASTING** 2658637.217 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	3.2	1	1.5	SM		SANDY SILT, CLAYEY, (SM) 5% gravel, 70% sand, 25% fines UHG-SM *(continued)*	Upper Hawthorn	4" Borehole
			1	1.5			61.0 — 121.9		
			1	1.5					
		5.1	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5					
		1.3	1	2.5					
			1	2.5					
		6	1	2.5			63.8 — 119.1		
			1	2	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines MHG-CL/SM	MHG Clay	
65		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2			66.5 — 116.4		
			1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
		0	1	1					
			1	1					
		0	1	1					
			1	1			68.9 — 114.0		Cement-Grout
70		0	1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH		
							70.0 — 112.9		

Bottom of borehole at 70.0 feet.

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Telephone: (303) 447-1823

BORING ID: SL 400N 280E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 183.069 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252044.571 ft **EASTING** 2658605.222 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger		
5							5.0 / 178.1		
		0	1				concrete and soil mix		Cement-Grout
			1	4			6.0 / 177.1		
		0	1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4					
	100	0	1	4					
			1	4	SP				
		0	1	4					
			1	4					
10		0	1	4			10.0 / 173.1		
			1				POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		2.3	1	5	SP				
			1	4			11.0 / 172.1		
		3.1	1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4	SP				
		3.3	1	5			12.5 / 170.6		
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		2.7	1	5	SP			Surficial Deposits	
			1	5					
		2.1	1	5			14.6 / 168.5		
15			1	5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		4" Borehole
	100	8	1	3					
			1	3					
		0	1	3					
			1	3					
		0	1	3	SM				
			1	3					
		0	1	3					
			1	3					
20		0	1	3			20.0 / 163.1		

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Telephone: (303) 447-1823

BORING ID: SL 400N 280E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 183.069 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252044.571 ft **EASTING** 2658605.222 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		1	1	1.5	CL/SM		20.7 INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-SM/CL 162.4	UHG Clay	Cement-Grout
			1	1			FAT CLAY, (CH) 100% fines UHG-CH		
		0	1	1	CH				
			1	1			22.3 160.8		
		0	1	1.5			INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM		
			1	1.5	CL/SM				
		1	3	1.5					
			1	1.5			24.2 158.9		
		3	1	2			SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
25			1	2					
		31	3	2					
			3	2	GM				
		75	3	2					
			2	2					
	100	62	2	1.5			27.6 155.5		
			1	2			SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	
				3					
		16	1	3					
			1	3					
		17	1	3					
30			1	3					4" Borehole
		18	1	3					
			1	3					
		66	2	3	SM				
			3	3					
		100	2	3					
			2	3					
		58	2	3					
			1	3					
35		15	1	3			35.0 148.1		

Bottom of borehole at 35.0 feet.

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Telephone: (303) 447-1823

BORING ID: SL 420N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 186.549 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252065.144 ft **EASTING** 2658523.102 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.549 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	2" PVC Riser; Cement-Grout; 2" SS Riser (threaded); 6" Borehole
5							5.0 181.5		
		0	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5			5.8 180.7		
			1	5			SILTY SAND, (SM) 75% sand, 25% fines		
		0.2	1	5	SM				
			1	5					
	100	0.5	1	0			7.7 178.8		
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0	1	5	SP				
			1	5					
		0	1	5			9.5 177.0		
10							POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1						
		0	1	4					
			1	4					
		0	1	4	SP				
			1	4					
		0	1	4					
			1	4					
		0	1	4					
			1	4			14.0 172.5		
		0.2	1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
15			1	5					
		0.8	1	5					
			1	5					
		1.5	1	5					
			1	5	SP				
		2.5	1	5					
			1	5					
		2.5	1	5					
			1	5					
		4.1	1	5					
20							20.0 166.5		

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BORING ID: SL 420N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 186.549 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252065.144 ft **EASTING** 2658523.102 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.549 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	15	4	4	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	Surficial Deposits	Fine Sand Seal
			1	5					
			1	2.5					
				2.5					
		7.1	1	2.5					
			1	2.5					
		4.2	1	2.5					
			1	2.5					
		11	1	2.5					
			1	2.5					
		12	1	2.5					
25			1	2.5			25.0 161.5		
		0	1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
			1	1			26.0 160.5		
		0	1	1	CL		SANDY LEAN CLAY, (CL) 100% fines UHG-CL		Bentonite Seal
			1	1					
		0	1	1					
			1	1					
		0	1	1					
		0	1	1.5			28.9 157.6		
30		0	1	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 30% sand, 70% fines UHG-CL/SM		6/20 Filter Sand
			5				30.0 156.5		
		114	5	1.5	ML		SANDY SILT, CLAYEY, (ML) 100% fines UHG-ML-B	Upper Hawthorn	
			5	1.5					
		106	5	1.5					
			5	1.5					10 ft Screen, 20 slot, SS
		45	5	1.5					
			1	1.5					
		16	1	1.5					
			1	1.5					
		7	1	1.5					
35			1	1.5					
		8.8	1	1.5					
			1	1.5			36.2 150.3		
		20	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5					
		19	1	2.5					
			1	2.5					
		11	1	2.5					
			1	2.5					
		16	1	2			39.4 147.1		
40					GM		SILTY GRAVEL, (GM) 60% gravel, 20% sand, 20% fines		
							40.0 146.5		

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BORING ID: SL 420N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 186.549 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252065.144 ft **EASTING** 2658523.102 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.549 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	9.9	1	1.5	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines (40.7 – 145.8)	Upper Hawthorn	Bottom of screen at 41.4 ft bgs
			1	2					
			1	2					
		7.7	1	2.5			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5					
		8.6	1	2.5					
			1	2.5					
		5.7	1	2.5					
			1	2.5					
		4.2	1	2.5					
45			1	2.5					
		4.4	1	2.5	SM				
			1	2.5					
		6	1	2.5					
			1	2.5					
		2.6	1	2.5					
			1	2.5					
		3.5	1	2.5					
			1	2.5					
		2.1	1	2.5					
50			1				(50.0 – 136.5)		
		0	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
55			1	2	SM				
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
60		0	1	2					

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BORING ID: SL 420N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/6/16 **COMPLETED** 11/6/16 **GROUND ELEVATION** 186.549 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252065.144 ft **EASTING** 2658523.102 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.549 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*		Upper Hawthorn	
			1	2						
				2						
		0	1	2						
				2						
		0	1	2				62.8 123.7		
			1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D			
		0	1	2.5						
			1	2.5						
		0	1	2.5						
65			1	2.5				65.3 121.2		
		0	1	2	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SILTY, (SM-CL) 20% sand, 80% fines MHG-CL-SM		MHG Clay	
			1	2						
		0	1	2						
			1	2				67.3 119.2		
		0	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL			
			1	1						
		0	1	1						
			1	1						
70		0	1	1				70.0 116.5		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 420N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 186.694 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252070.564 ft **EASTING** 2658557.791 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	No Core	Cement-Grout
5							5.0 / 181.7		
		2.1	1 1 1	3 3 3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	Surficial Deposits	
		6.1	1 1	3 3			7.0 / 179.7		
	100	4.3	1 1 1	5 3 5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		9.2	1 1 1	5 3 3	SWG		8.0 / 178.7 SILTY SAND WITH GRAVEL, (SWG) 80% sand, 20% fines SA-SM-GM- Gravel road base mixed with SM sand and silt		
		2.7	1 1 1	3 5 5	SP		9.0 / 177.7 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
10							10.0 / 176.7		
		1.9	1 1 1	5 3 3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
		1.7	1	3			11.6 / 175.1		
			1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		1	1	4					
			1	4					
		1.5	1	4					
			1	4					
		1.5	1	4					
15			1	4			15.0 / 171.7		
	100		1	3			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		4" Borehole
		1.7	1	5					
			1	5					
		3.1	1	5					
			1	5					
		4.3	1	5	SP				
			1	5					
		4.7	1	5					
			1	5					
		5.1	1	5					
20			1	5			20.0 / 166.7		

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BORING ID: SL 420N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 186.694 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252070.564 ft **EASTING** 2658557.791 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		2	1	2	SM		SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C	UHG Clay	Cement-Grout
		8.1	1	2					
		87	2.5	2					
		125	2.5	2					
25		139	2.5	2					
		114	2.5	2					
		115	2	1					
	100	81	2	2	CH		FAT CLAY, (CH) 100% fines UHG-CH		
		51	2	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM		
30		50	2	1.5					4" Borehole
		48	3	1.5					
		88	2	2	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
		48	2	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		31	2	3					
35		21	1	3					

26.2 160.5 | 27.6 159.1 | 30.5 156.2 | 32.1 154.6 | 35.0 151.7

Bottom of borehole at 35.0 feet.

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BORING ID: SL 420N 340E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/14/16 **COMPLETED** 11/14/16 **GROUND ELEVATION** 183.38 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252069.927 ft **EASTING** 2658676.497 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger		
5							5.0 178.4		
		0	1	5			5.5 Concrete soil mixture 177.9		Cement-Grout
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B/A		
		0	1	5					
			1	5					
	100	0	1	5	SP				
			1	5					
		0	1	5					
			1	5					
10		0	1	5			10.0 173.4		
			1				SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		0	1	3					
			1	3					
		0	1	3					
			1	3	SM			Surficial Deposits	
		0	1	3					
			1	3					
		0	1	3					
			1	3			14.0 169.4		
		0	1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
15			1	5					
		0	1	5					
			1	5					
		0	1	5	SP				
			1	5					
		0	1	5					
			1	5					
		0	1	5					
			1	5			19.0 164.4		
		8	1	3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
20									

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/14/16 **COMPLETED** 11/14/16 **GROUND ELEVATION** 183.38 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252069.927 ft **EASTING** 2658676.497 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	4	1	5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A *(continued)*	Surficial Deposits	Cement-Grout
		8	1	3					
		13	1	3					
		5	1	3					
		7	1	3	SM-CL		23.5 159.9 INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM 24.0 159.4	UHG Clay	
25		13	1	1.5	CL		LEAN CLAY, (CL) 100% fines UHG-CL 24.5 158.9		
		12	1	1	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM 25.2 158.2		
		12	1	1.5	CH		FAT CLAY, (CH) 100% fines UHG-CH 25.8 157.6		6" Borehole
		15	1	1	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
30		19	1	2			30.0 153.4		
		2	1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B	Upper Hawthorn	
		9	1	3					
		9	1	3					
		17	1	3			34.0 149.4		
35		17	1	2	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		19	1	2					
		20	1	2			37.0 146.4		
		22	1	2	SM		SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
		24	1	2					
40		23	1	2			40.0 143.4		

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BORING ID: SL 420N 340E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/14/16 **COMPLETED** 11/14/16 **GROUND ELEVATION** 183.38 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252069.927 ft **EASTING** 2658676.497 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	23	1	2	SM		SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C	Upper Hawthorn	Cement-Grout
		25					42.0 – 141.4		6" Borehole
		13		3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		14							
		15							
45									
		20							
		16							
		17							
		16							
50		16							
		2							
		3							
		4							
		3							
		3							
55									4" Borehole
		3							
		4							Cement-Grout
	100	3							
		3							
		2							
60							60.0 – 123.4		

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CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/14/16 **COMPLETED** 11/14/16
GROUND ELEVATION 183.38 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252069.927 ft **EASTING** 2658676.497 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation (ft amsl) **Stickup** ft
NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60		0	1	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	3			61.0 — 122.4		
		0	1	2.5-1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-SM/CL	MHG Clay	
		0	1	2.5-1.5			63.0 — 120.4		4" Borehole
		0	1	2.5-1.5	CL		LEAN CLAY, (CL) 100% fines MHG-CL		
65		0	1	1			65.0 — 118.4		

Bottom of borehole at 65.0 feet.

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CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 189.349 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252070.125 ft **EASTING** 2658757.366 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	Cement-Grout
5		4.5	1	3	SM		5.0 184.3 ORGANIC SOIL WITH SAND, (SM) 80% sand, 20% fines Topsoil, organic matter, roots, plants		
			1	3					
		1	1	3			6.8 182.5		
			1	3			7.1 182.2 Concrete soil mix		
	100	0.9	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4					
		1.1	1	4			8.6 180.7		
			1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		2.3	1	4					
10			1	4			10.0 179.3		6" Borehole
							No Recovery, compacted soil stuck in core barrel		
			1	5					
							14.0 175.3		
			1	3					
		1.6	1	3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
15	100		1	3					
		1.9	1	3			15.6 173.7		
			1	3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
		0.7	1	3					
			1	3					
		1.9	1	3			17.7 171.6		
			1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		0.7	1	4			18.9 170.4		
			1	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		0.5	1	2					
20			1	2			20.0 169.3		

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BORING ID: SL 420N 420E

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 189.349 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252070.125 ft **EASTING** 2658757.366 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		0.4	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	Surficial Deposits	Cement-Grout
		0.5	1	5			22.0 / 167.3		
		0.3	1	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		0.4	1	2			24.7 / 164.6		
25	100	0.4	1	2	SP		25.0 / 164.3 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0.3	1	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		0.3	1	2			27.4 / 161.9		
		0	1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		0	1	1			29.2 / 160.1		
30		0.5	1	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM		6" Borehole
		1.3	2.5	1.5			30.9 / 158.4		
		1	1	1.5	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 20% sand, 80% fines UHG-CH/SM		
		52	3	2	GM		31.9 / 157.4 SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		11	1	3	SM		33.0 / 156.3 SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B	Upper Hawthorn	
35		11	1	3					
		9.2	1	3					
		8.1	1	3					
		7.7	1	3					
40		7.7	1	3			40.0 / 149.3		

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Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 420N 420E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 189.349 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252070.125 ft **EASTING** 2658757.366 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	6.9	1	1.5	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B	Upper Hawthorn	6" Borehole
		6.7	1	3					
		5.8	1	3					
		5.3	1	3					
		6	1	3			44.5 144.8		
45		5.6	1	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		5.4	1	3					
		6.6	1	2			47.0 142.3		
		7.3	1	2			SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
50		71	2	2					4" Borehole
		3.1	1	2					
		3.3	1	2					
		2.7	1	2					
		2.5	1	2	SM				
		2.4	1	2					
55		2.6	1	2					Cement-Grout
		2.4	1	2					
		2.2	1	2					
		1.4	1	2					
		1.9	1	2			60.0 129.3		
60									

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DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252070.125 ft **EASTING** 2658757.366 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	1.2	1	2	ML		SILT, (ML) 100% fines UHG-ML-B	Upper Hawthorn	4" Borehole
			1	1.5					
			1	1.5					
		0.9	1	1.5			61.8 — 127.5		
		0.7	1	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		0.2	1	3					
		0.3	1	3					
65		1.7	1	3					
		1.6	1	3					Cement-Grout
		0.9	1	3					
		1.5	1	3					
		1.4	1	3			70.0 — 119.3		
70		1.2	1	1	CL		LEAN CLAY, (CL) 100% fines MHG-CL	MHG Clay	
	100	1.2	1	1					
		1	1	1			73.0 — 116.3		

Bottom of borehole at 73.0 feet.

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BORING ID: SL 450N 100E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/19/16 **COMPLETED** 11/19/16 **GROUND ELEVATION** 183.291 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252094.824 ft **EASTING** 2658440.445 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	Cement-Grout
5		0.3 0.9 0.7 0.3 1.5	1 1 1 1 1 1 1 1 1 1	3 3 3 5 5 5 5 5	SM SP		6.5 176.8 SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A 8.0 175.3 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B 10.0 173.3		
10	100	2.7 2.5 1.1 1.3	1 1 1 1 1 1 1 1 1 1	4 4 4 4 4 5 5 5 5 5	SP SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A 13.0 170.3 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B 16.5 166.8		4" Borehole
15		1.1 1.3 0.1 0.7 1.5	1 1 1 1 1 1 1 1 1 1	5 5 5 5 5 5 5 5 5 5	SP		POORLY GRADED SAND, SILTY, (SP) 87% sand, 13% fines SA-SP-B/SA-SM-A (alternating 0.3' Layers)		
20							20.0 163.3		

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/19/16 **COMPLETED** 11/19/16 **GROUND ELEVATION** 183.291 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252094.824 ft **EASTING** 2658440.445 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		5.8	1	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	Surficial Deposits	Cement-Grout
		14	1	2					
		43	1	2					
			2	2					
			1	2			23.0 160.3		
		17	1	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM 23.5 159.8	UHG Clay	
			1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH 24.6 158.7		
		16	1	1					
25	100		1	2	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM 25.5 157.8		
		10	1	1.5					
			1	1.5	CH		25.8 FAT CLAY, (CH) 100% fines UHG-CH 157.5		
			1	1	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM		4" Borehole
		9.3	1	1.5					
			1	1.5			27.4 155.9		
		8.2	1	2	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
			1	2					
		7.1	1	2					
			1	2					
30		6	1	2			30.0 153.3		

Bottom of borehole at 30.0 feet.

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BORING ID: SL 460N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 182.678 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252105.11 ft **EASTING** 2658490.029 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 184.678 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft East from borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0		27	1	4	SP		POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-A	Surficial Deposits
			1	4				
		13	1	4				
			2	3			2.0 180.7	
	70	78	2	4	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	
			2	3				
		80	2	3			3.5 179.2	
5							No Recovery 5.0 177.7	
		104	2	3	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	
			2	3				
		74	2	3			6.5 176.2	
	30						No Recovery	
10							10.0 172.7	
		110	2	2	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	
			2	2			11.1 171.6	
		132	2	2	SM		SILTY SAND, (SM) 65% sand, 35% fines SA-SM-B	
			2	2			12.3 170.4	
		180	2	2	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
			3	5				
		39	3	5				
			3	5				
		102	3	5				
15	100		3	5				
		209	3	5				
			4	5				
		86	4	5				
			4	5				
		112	4	5				
			5	5				
		183	5	5				
			5	5				
20		93	5	5				

WELL CONSTRUCTION DIAGRAM

2" PVC Riser
2" SS Riser (threaded)
Cement Grout
6" Borehole
Fine Sand
Bentonite
Filter Sand
10 ft screen, 20 slot, SS

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BORING ID: SL 460N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 182.678 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252105.11 ft **EASTING** 2658490.029 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 184.678 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft East from borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20			5						
		24	5	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B *(continued)*	Surficial Deposits	Filter Sand
			5	5	SP				
		71	5	5					
			5	5			22.0 160.7		
		12	2	1.5	CL		SANDY LEAN CLAY, (CL) 100% fines UHG-CL		
			2	1			23.2 159.5		
		10	2	1	CH		23.5 FAT CLAY, (CH) 100% fines UHG-CH 159.2	UHG Clay	Bottom of screen at 22.7 ft bgs
			2	1.5			SANDY LEAN CLAY, (CL) 100% fines UHG-CL		
		14	2	1.5	CL				
25			2	5			25.4 157.3		
	100	37	2	1.5					
			2	1.5	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 50% gravel, 20% sand, 30% fines UHG-GM		
		14	2	2			26.9 155.8		
			2	2			SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
		86	2	2					
		18	2	2					
		37	2	2	SM				
			2	2					
		87	2	2					
30			3	2			30.0 152.7		
							No Recovery	Upper Hawthorn	
35	45						35.5 147.2		
		18	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2					
		18	1	2					
			1	2					
		99	2	2	SM				
			1	2					
		64	2	2					
			1	2					
40		39	2	2					

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BORING ID: SL 460N 140E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 182.678 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252105.11 ft **EASTING** 2658490.029 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 184.678 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft East from borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40			1						
		2	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*		
			1	2					
		5.5	1	2					
			1	2					
		5.1	1	2					
			1	2					
		4.7	1	2					
			1	2					
		3.4	1	2					
45			1	2					
	100								
		2.0	1	2					
			1	2					
		1.6	1	2					
			1	2					
		0.7	1	2					
			1	2					
		1.4	1	2					
			1	2					
50		0.0	1	2					
			1		SM			Upper Hawthorn	
		0.2	1	2					
			1	2					
		0.0	1	2					
			1	2					
		0.0	1	2					
			1	2					
		0.1	1	2					
			1	2					
55		0.0	1	2					
	100		1	2					
		0.0	1	2					
			1	2					
		0.0	1	2					
			1	2					
		0.1	1	2					
			1	2					
		0.0	1	2					
			1	2					
60		0.0	1	2					

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DATE STARTED 11/2/16 **COMPLETED** 11/2/16 **GROUND ELEVATION** 182.678 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252105.11 ft **EASTING** 2658490.029 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 184.678 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft East from borehole.

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60			1		SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)* 60.8 121.9		
		0.0	1	1.5					
			1	1.5					
		0.0	1	1.5	SM-CL				
			1	1.5					
	100	0.0	1	2			INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines MHG-SM-CL 62.5 120.2	MHG Clay	
			1	1					
				1					
		0.0	1	1	CL				
			1	1					
65		0.0	1	1			LEAN CLAY, (CL) 100% fines MHG-CL 65.0 117.7		

Bottom of borehole at 65.0 feet.

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BORING ID: SL 460N 180E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/17/16 **COMPLETED** 11/17/16
GROUND ELEVATION 186.518 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252109.493 ft **EASTING** 2658524.579 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 188.518 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit
0							No core, hand auger	Surficial Deposits
5								
	80	0 0.8 7 8.8	1 1 1 2 2 2 2	0 4 4 3.5 3.5 3.5 3.5 3.5	SP SM		6.0 180.5 POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A 7.0 179.5 SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	
10							10.0 176.5	
	100	6.5 3.1 2.7 1 1.1 0 0 3.1 7.6 3	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 4 4 4 4 4 3.5 3.5 3.5 3.5 3.5 5 5 5 5 5	SP SM SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A 14.0 172.5 SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A 16.5 170.0 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	
15								
20							20.0 166.5	

WELL CONSTRUCTION DIAGRAM
2" PVC Riser
Cement-Grout
2" SS Riser (threaded)
6" borehole

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DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 186.518 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252109.493 ft **EASTING** 2658524.579 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 188.518 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20			1				SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	Surficial Deposits	
		70	2	2.5					
			2	2.5					
		110	2	2.5	SM				
			2	2.5					
		82	2	2.5					
			2	2.5					
		173	2	2.5			23.5 / 163.0		Fine Sand
			1	1			FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		25	1	1	CH				
25			2	1			25.0 / 161.5		Bentonite
					SP		25.5 / 161.0 POORLY GRADED SAND, (SP) 90% sand, 10% fines UHG-SP		
		105	2	2	SM-CL		26.0 / 160.5 INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM		
			1	1.5	CH		26.3 / 160.2 FAT CLAY, (CH) 100% fines UHG-CH		
		60	2	1.5	SM-CL		27.2 / 159.3 INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM		
			2	1.5					
		85	3	2			SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			3	2					
		70	3	2					
			3	2					Filter Sand
		90	4	2					
30			4	5					
	100	210	5	2					
				2	GM				
			4	2					10 ft Screen, 20 slot, SS
		70	4	2					
			4	2					
		51	4	2					
			2	2					
		72	2	2					
			2	2			34.0 / 152.5		
		49	2	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C	Upper Hawthorn	
35			2	2					
		23	2	2					
			2	2	SM				
		25	2	2					
			2	2					
		31	2	2					
			2	2			38.0 / 148.5		
		24	2	2.5			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			2	2.5	SM				Bottom of Screen at 39.9 ft bgs
		29	2	2.5					
40							40.0 / 146.5		

Bottom of borehole at 40.0 feet.

ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:26 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ

TETRA TECH
Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 460N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.593 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252116.661 ft **EASTING** 2658552.585 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.593 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									2" PVC Riser
							No core, hand auger		Cement Grout
5							5.0 181.6		2" SS Riser (threaded)
		11.1	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		6" Borehole
			1	4					
		40	2	4					
			1	4			7.2 179.4		
	100	51	2	4	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		Fine Sand
		107	5	5					
		135	5	5					Bentonite
			4	5					
10		95	4	5			10.0 176.6		
			4				No Recovery	Surficial Deposits	
							12.8 173.8		
			5	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		Filter Sand
		73	5	5					
			5	5					
		85	5	5					
15			5	5			15.3 171.3		
		49	5	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			4	2.5					
		39	4	2.5					
			4	2.5					
		28	4	2.5			17.8 168.8		
			4	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		59	4	3.5					
			4	3.5					
		31	4	3.5					
20									

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BORING ID: SL 460N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.593 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252116.661 ft **EASTING** 2658552.585 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.593 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	85	30	4	5			20.3 / 166.3		
		36	4	3.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	Surficial Deposits	10 ft Screen, 20 slot, SS
		34	2	2.5					
		39	2	2.5			23.7 / 162.9		
		51	2	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
25		58	2	5			24.8 / 161.8		
		65	2	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		27	5	2.5			27.6 / 159.0		
		16	1	1	CH		FAT CLAY, (CH) 0% sand, 100% fines UHG-CH	UHG Clay	
		31	2	2	CL/SM		28.3 / 158.3		
30			4	2	GM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-SM-CL		Bottom of screen at 28.6 ft bgs
		0.6	1	2			29.7 / 156.9		
			1	2	ML		30.0 / 156.6 SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
		0.3	1	2			SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
			1	3			31.7 / 154.9		
		0.4	1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
			1	3					
		0.4	1	3					
			1	3					
		0.7	1	3					
35			1	3			35.2 / 151.4		
		0.3	1	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			1	2					
		3	1	2					
			1	2					
		5.4	1	2	SM				
			1	2					
		4.3	1	2					
			1	2					
		2.4	1	2					
40					GM		39.6 / 147.0		

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BORING ID: SL 460N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.593 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252116.661 ft **EASTING** 2658552.585 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.593 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	3.3	1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM *(continued)*	Upper Hawthorn	
			1	2			40.6		
			1	2.5			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D		
		2.3	1	2.5					
			1	2.5					
		2.9	1	2.5					
			1	2.5					
		3.9	1	2.5					
			1	2.5					
		3	1	2.5					
45			1	2.5					
		3.1	1	2.5					
			1	2.5					
		3.6	1	2.5					
			1	2.5					
		2.8	1	2.5					
			1	2.5					
		2.7	1	2.5					
			1	2.5					
		2.7	1	2.5					
50			1						
		0	1	2.5	SM				
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
55			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
60			1	2.5					

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BORING ID: SL 460N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.593 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252116.661 ft **EASTING** 2658552.585 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.593 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	0	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2.5					
		0	1	2.5					
			1	2					
65		0	1	2					
			1	2					
		0	1	1					
			1	1					
		0	1	1					
			1	1					
		0	1	1					
			1	1					
		0	1	1					
			1	1					
70		0	1	1					

62.2 — 124.4: SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D

63.5 — 123.1: SILTY SAND WITH GRAVEL, SILTY, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D

65.0 — 121.6: LEAN CLAY WITH SAND, SILTY, (SM-CL) 20% sand, 80% fines MHG-CL-SM

70.0 — 116.6: LEAN CLAY, SILTY, (CL) 0% sand, 100% fines MHG-CL

Bottom of borehole at 70.0 feet.

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BORING ID: SL 460N 280E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.806 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252109.661 ft **EASTING** 2658598.853 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	Cement-Grout
5							5.0 / 177.8		
		0	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5					
		3.1	1	5					
			1	5			7.2 / 175.6		
	100	3.2	1	5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			1	2					
		2.8	1	2					
			1	2					
		2.7	1	2					
10			1	2			10.0 / 172.8		
		1	1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4			11.3 / 171.5		
		5	1	5	SP		POORLY GRADED GRAVEL, (SP) 95% sand, 5% fines SA-SP-B		
			1	5			12.3 / 170.5		
		3.1	1	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			1	2					
		3	1	2					
			1	2					
		7.2	1	2					
15			1	2			15.0 / 167.8		4" Borehole
		10.1	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5					
			1	5					
		8.6	1	5					
			1	5					
		9.2	1	5					
			1	5					
		15	1	5			18.5 / 164.3		
			2	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			3	2					
		236	3	2					
20			3	2			20.0 / 162.8		

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Telephone: (303) 447-1823

BORING ID: SL 460N 280E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.806 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252109.661 ft **EASTING** 2658598.853 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	143	1 2 1	4 1.5 1.5 1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM 21.2 — 161.6	UHG Clay	Cement-Grout
		149	2 1	1 1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
		157	2 3	1 1					
		25	1 1	1 1					
25		25	1 1 2	1.5 1.5 1.5			24.5 — 158.3		
		199	2 1	1.5 1	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM 26.0 — 156.8		4" Borehole
		32	1 2 1	1 1 2	CL		LEAN CLAY, (CL) 100% fines UHG-CL 27.0 — 155.8		
		260	1 3 3	2 2 2	SM		SILTY SAND, (SM) 10% gravel, 70% sand, 20% fines UHG-SM 28.0 — 154.8	Upper Hawthorn	
		157	3 2	2 2	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
30		70	3 2	2 2			30.0 — 152.8		

Bottom of borehole at 30.0 feet.

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BORING ID: SL 460N 380E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/15/16 **COMPLETED** 11/15/16
GROUND ELEVATION 183.345 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252110.521 ft **EASTING** 2658701.946 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 185.345 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	2" PVC Riser
5							5.0 / 178.3		
							No Recovery		2" SS Riser (threaded)
			1	4.5			6.0 / 177.3		
		0		4.5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	4.5					
	80	0		4			7.5 / 175.8		
			1	4	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
		0		4					
			1	2.5			9.0 / 174.3		
10		0		2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
							10.0 / 173.3		6" Borehole
			1				POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0.7	1	5					
			1	5					
		5	1	5					
			1	5					
		3	1	5					
			1	5	SP				
		7	1	5					
			2	5					
		10	2	5					
15			2	5					Cement-Grout
		4	1	5					
			1	5			16.0 / 167.3		
		10	2	2.5			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			2	2.5					
		20	2	2.5	SM				
			2	2.5					
		25	1	2.5					
			1	2.5					
		26	3	1			19.5 / 163.8		
20					CH		FAT CLAY, (CH) 100% fines UHG-CH		

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BORING ID: SL 460N 380E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 183.345 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252110.521 ft **EASTING** 2658701.946 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.345 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	72	3	5	CH		20.5 FAT CLAY, (CH) 100% fines UHG-CH *(continued)* 162.8	UHG Clay	Cement-Grout
			2	1					
			2	1.5					
		50	2	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM		
			3	1.5					
		81	3	1.5					
			3	1.5					
		26	2	1.5			23.5 159.8		
			2	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
		10	2	2					
25			3	2					
		6	1	2			26.0 157.3		
			1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		9	1	2					
			1	2					
		25	3	2					
			3	2					
		115	3	2					
			2	2					
30		32	2	2			30.0 153.3		
			2		SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D	Upper Hawthorn	6" Borehole
		5	1	2.5					
			1	2.5					
		6	1	2.5					
			1	2.5					
		5	1	2.5					
			1	2.5					
		9	1	2.5					
			1	2.5					
35		6	1	2.5					
			1	2.5					
		15	1	2.5					
			1	2.5					
		9	1	2.5					
			1	2.5					
		9	1	2.5					
			1	2.5					
		10	1	2.5					
			1	2.5					
40		4	1	2.5					

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BORING ID: SL 460N 380E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/15/16 **COMPLETED** 11/15/16
GROUND ELEVATION 183.345 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252110.521 ft **EASTING** 2658701.946 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 185.345 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	6	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D *(continued)*	Upper Hawthorn	Cement-Grout
			1	2.5					
			1	2.5					
		7	1	2.5					
			1	2.5					
		9	1	2.5					
			1	2.5					
		75	2	2.5					
			3	2.5					
		74	3	2.5					
45			3	2.5					6" Borehole
		230	3	2.5					
			3	2.5					
		251	3	2.5					
			3	2.5					
		60	2	2.5					
			2	2.5					
		51	2	2.5					Fine Sand
			2	2.5					
		37	2	2.5					
50			4						Bentonite
		170	2	2.5					
			2	2.5					
		150	2	2.5					
			4	2.5					
		152	4	2.5					
			3	2.5					
		154	3	2.5					
			3	2.5					
		322	4	2.5					
55			4	2.5					Filter Sand
		325	4	2.5					
			4	2.5					
		177	3	2.5					
			3	2.5					
		140	3	2.5					
			3	2.5					10 ft screen, 20 slot, SS
		170	3	2.5					
			3	2.5					
60		106	2	2.5					

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BORING ID: SL 460N 380E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/15/16 **COMPLETED** 11/15/16 **GROUND ELEVATION** 183.345 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252110.521 ft **EASTING** 2658701.946 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 185.345 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	355	2	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-D *(continued)*		Fine Sand
			3	2.5					
			3	2.5					
		380	3	2.5					
			3	2.5					
		240	4	1.5			62.4 120.9		
			2	1.5	SM-CL		LEAN CLAY WITH SAND, SILTY, (SM-CL) 20% sand, 80% fines MHG-SM-CL	MHG Clay	
		48	2	1.5					
			2	1.5					
		39	2	1.5					
65			3	1.5					
		30	2	1.5					
			3	1.5			66.0 117.3		4" Borehole
		22	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
			1	1					
		17	1	1					
			1	1					Bentonite
		14	1	1					
			1	1			69.2 114.1		
70		12	1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH 70.0 113.3		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 500N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/1/16 **COMPLETED** 11/1/16 **GROUND ELEVATION** 186.337 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252157.583 ft **EASTING** 2658524.334 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.337 (ft amsl) **Stickup** 2 ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No Recovery		2" PVC Riser
			2	3			3.0		
		42	2	3			SILTY SAND, GRAVELLY, (SM) 2% gravel, 63% sand, 35% fines SA-SM-C		2" SS Riser (threaded)
			2	3					
		50	2	3					
5	70		2	3					
		53	2	3	SM				
			2	3					
		101	3	3					
			3	3					
		249	3	3					
			3	3			8.0		
		232	4	3			SILTY SAND, (SM) 75% sand, 25% fines SA-SM-B		
			4	3					
10		360	4	3	SM				6" Borehole
			4						
		33	4	3					
			4	3			11.3	175.0	
		19	4	3	SM		11.6 SILTY SAND, GRAVELLY, (SM) 10% gravel, 65% sand, 25% fines SA-SM-C	174.7	
			4	4			POORLY GRADED SAND, (SP) 90% sand, 10% fines SA-SP-B		
		147	4.5	4					
			4.5	4					
		150	4.5	4					
			4.5	44					
		175	4.5	4					
15	100		4.5	3					Cement-Grout
		300	4.5	4					
			4.5	4	SP				
		236	4.5	4					
			4.5	4					
		107	4.5	4					
			4.5	4					
		136	4.5	4					
			4.5	4					
		82	4.5	4					Fine Sand
20							20.0		
							166.3		

Surficial Deposits

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BORING ID: SL 500N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/1/16 **COMPLETED** 11/1/16 **GROUND ELEVATION** 186.337 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252157.583 ft **EASTING** 2658524.334 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.337 (ft amsl) **Stickup** 2 ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20			4.5						
		32	3	2	SM		SILTY SAND, (SM) 75% sand, 25% fines SA-SM-C		
			3	2					
		77	3	2					
		42	3	1			22.2 164.1		Bentonite
		21	2	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
			2	1					
		7	2	1			24.1 162.2		
			2	1	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM	Upper Hawthorn	
			5	2					
		205	5	2					
25	100		4	2					
			4	4					
		163	4	2			26.1 160.2		
			4	2	SM		CLAYEY SAND, (SM) 50% sand, 50% fines UHG-SM-CL		
		42	2	2					
			2	2					
		39	2	2					
			2	2					
		42	2	2			28.7 157.6		
			2	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
		36	2	2					
30			2						Filter Sand
		100	5	2.5					
			5	2.5					
		83	5	2.5					
			5	2.5					
		32	2	2.5					
			2	2.5					
		26	2	2.5					
			2	2.5					
		22	1	2.5					10 ft screen, 20 slot, SS
35	100		1	2.5					
		18	1	2.5					
			1	2.5					
		15	1	2.5					
			1	2.5			37.3 149.0		Bottom of Screen at 36.7 ft bgs.
		41	2	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2.5					
		16	1	2.5					
			1	2.5					
		15	1	2.5					
40									

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BORING ID: SL 500N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/1/16 **COMPLETED** 11/1/16 **GROUND ELEVATION** 186.337 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252157.583 ft **EASTING** 2658524.334 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.337 (ft amsl) **Stickup** 2 ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40			1				SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*		
		6.1	1	2.5					
			1	2.5					
		6.7	1	2.5					
			1	2.5					
		6.9	1	2.5					
			1	2.5					
		6.1	1	2.5					
			1	2.5					
		5.9	1	2.5					
45	100		1	2.5					
		12	1	2.5					
			1	2.5					
		6.6	1	2.5					
			1	2.5					
		6.9	1	2.5					
			1	2.5					
		8.4	1	2.5					
			1	2.5					
		5.5	1	2.5					
50			1		SM			Upper Hawthorn	
		6.8	1	2.5					
			1	2.5					
		5.1	1	2.5					
			1	2.5					
		5	1	2.5					
			1	2.5					
		2.4	1	2.5					
			1	2.5					
		6.3	1	2.5					
55	100		1	2.5					
		5	1	2.5					
			1	2.5					
		7.4	1	2.5					
			1	2.5					
		8.6	1	2.5					
			1	2.5					
		3.9	1	2.5					
			1	2.5					
		4.4	1	2.5					
60									

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BORING ID: SL 500N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/1/16 **COMPLETED** 11/1/16 **GROUND ELEVATION** 186.337 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252157.583 ft **EASTING** 2658524.334 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.337 (ft amsl) **Stickup** 2 ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60									
		0.2	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C *(continued)*		
			1	2.5					
		0	1	2.5					
			1	2.5					
		0.3	1	2.5					
			1	2			62.9	123.4	
		0.1	1	2	SM-CL		LEAN CLAY WITH SAND, SILTY, (SM-CL) 20% sand, 80% fines MHG-CL-SM	MHG Clay	
			1	2					
		0.4	1	1.5					
65	100		1	2.5					
		0	1	1.5					
			1	1.5			66.0	120.3	
			1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
		0	1	1					
			1	1					
		0.3	1	11					
			1	1					
		0.2	1	1					
			1	1					
		0.1	1	1			69.5	116.8	
70					CH		70.0 FAT CLAY, (CH) 100% fines MHG-CH	116.3	

Bottom of borehole at 70.0 feet.

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Telephone: (303) 447-1823

BORING ID: SL 500N 350E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/20/16 **COMPLETED** 11/20/16 **GROUND ELEVATION** 181.127 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252144.088 ft **EASTING** 2658676.706 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 183.127 (ft amsl) **Stickup** 0 ft

NOTES Borehole abandoned with grout, well offset 4 ft South from borehole with a flush mount in the road

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									Flush Mount
							No core, hand auger		
5							5.0 — 176.1		2" SS Riser (threaded)
			1				POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		6" Borehole
		0.5	1	5					
			1	5					
		2.5	1	5					
			1	5	SP				
		5.3	1	5					
			2	5					
		53	2	5			8.7 — 172.4		
			2	2.5			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		Fine Sand Seal
		57	3	2.5					
10			3	2.5	SM				Bentonite Seal
		153	2	2.5					
			2	2.5					
		200	2	2.5			11.5 — 169.6		
			2	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		6/20 Filter Sand
	100	140	2	5					
			1	5					
		150	2	5					
			1	5					
		104	2	5					
15			2	5					10 ft Screen, 20 slot, SS
		73	3	5					
			2	5	SP				
		79	3	5					
			2	5					
		76	2	5					
			3	5					
		110	2	5					
			3	5					
20		85	4.5	5					

Surficial Deposits

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BORING ID: SL 500N 350E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/20/16 **COMPLETED** 11/20/16 **GROUND ELEVATION** 181.127 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252144.088 ft **EASTING** 2658676.706 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 183.127 (ft amsl) **Stickup** 0 ft

NOTES Borehole abandoned with grout, well offset 4 ft South from borehole with a flush mount in the road

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		69	4.5	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B *(continued)*	Surficial Deposits	
			4.5	5					
		25	4.5	5			21.5 / 159.6		
			2	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
		32	2	2.5					
			3	2.5			23.3 / 157.8		
		57	3	1.5	CH/SM		23.7 / 157.4 INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 30% sand, 70% fines UHG-CH/SM	UHG Clay	Bottom of Screen at 23.7 ft bgs.
		25	2	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
			3	1					
25	100		2	5			25.6 / 155.5		
		47	3	1	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM		
			1	1					
		29	1	1.5			26.7 / 154.4		
			3	1.5	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 30% sand, 70% fines UHG-CH/SM		
		27	1	1.5			27.7 / 153.4		
			1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
		26	1	2					
			2	2					
30		190	3	2			30.0 / 151.1		
			4		SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
		15	3	3					
			4	3					
		25	4	3					
			3	3					
		67	4	3					
			3	3					
		47	3	3					
			3	3					
		118	3	3			34.5 / 146.6		
35			1	1.5	ML		SANDY SILT, CLAYEY, (ML) 0% sand, 100% fines UHG-ML-B		
		54	2	1.5					
			1	1.5			36.4 / 144.7		
		36	2	3	SM		37.0 / 144.1 SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
			1	3	ML		SANDY SILT, CLAYEY, (ML) 0% sand, 100% fines UHG-ML-B		
		21	1	1.5					
			1	1.5			38.5 / 142.6		
		21	1	1.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5					
40		16	1	2.5					

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BORING ID: SL 500N 350E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/20/16 **COMPLETED** 11/20/16 **GROUND ELEVATION** 181.127 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252144.088 ft **EASTING** 2658676.706 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 183.127 (ft amsl) **Stickup** 0 ft

NOTES Borehole abandoned with grout, well offset 4 ft South from borehole with a flush mount in the road

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	18	1	2	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	2.5					
			1	2.5					
		16	1	2.5					
			1	2.5					
		17	1	2.5					
			1	2.5					
		15	1	2.5			43.5 137.6		
			1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
		17	1	2					
45			1	2					
		17	1	2					
			1	2					
		19	1	2					
			1	2					
		22	1	2					
			1	2					
		16	1	2					
			1	2					
		17	1	2					
50			1						
		7	1	2					
			1	2					
		5	1	2					
			1	2					
		6	1	2					
			1	2					
		6	1	2			53.5 127.6		
			1	2.5			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		5	1	2.5					
55			1	2.5					
		6	1	2.5					
			1	2.5					
		11	1	2.5	SM				
			1	2.5					
	100	11	1	2					
			1	2.5					
		9	1	2.5					
			1	2.5					
		7	1	2.5					
60									

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TETRA TECH
Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 500N 350E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/20/16 **COMPLETED** 11/20/16 **GROUND ELEVATION** 181.127 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252144.088 ft **EASTING** 2658676.706 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 183.127 (ft amsl) **Stickup** 0 ft

NOTES Borehole abandoned with grout, well offset 4 ft South from borehole with a flush mount in the road

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60			1	2.5					
		8	1	2.5			SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	2.5					
		6	1	2.5	SM				
			1	2.5					
		6	1	2.5			62.8 118.3		
			1	1			LEAN CLAY, SILTY, (CL) 100% fines MHG-CL	MHG Clay	
		4	1	1					
			1	1	CL				
65		4	1	1			65.0 116.1		

Bottom of borehole at 65.0 feet.

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BORING ID: SL 500N 420E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 188.278 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252150.075 ft **EASTING** 2658756.963 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 190.278 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									2" PVC Riser
							No core, hand auger		
5							5.0 183.3		2" SS Riser (threaded)
		0.7	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines TOPSOIL		6" borehole
			1	5			6.0 182.3		
		2.7	1	3.5			SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3.5					
	100	2.1	1	3.5					
			1	3.5	SM				
		5.2	1	3.5					
			1	3.5					
		2.7	1	3.5					
10							10.0 178.3		Cement-Grout
			1				No Recovery	Surficial Deposits	
15							15.0 173.3		
		2.1	1	1			Concrete and soil mixture		
			1	1					
		2.2	1	1					
			1	1			17.2 171.1		
		0.8	1	3.5			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			1	3.5					
		1.4	1	3.5	SM				
			1	3.5					
		0	1	3.5					
20							20.0 168.3		

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BORING ID: SL 500N 420E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 188.278 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252150.075 ft **EASTING** 2658756.963 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 190.278 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	75	0	1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B	Surficial Deposits	Cement-Grout
			1	3.5					
			1	3.5					
		0	1	3.5					
			1	3.5					
		0.6	1	3.5					
			1	3.5					
		0.7	1	3.5					
			1	3.5					
		0	1	3.5					
25			1	5			24.7 163.6		
			1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0	1	5					
			1	5					
		0.4	1	5					
			1	5					
		0.4	1	5					
			1	5			28.0 160.3		
		0.8	1	2.5	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			2	2.5			29.0 159.3		
30		4.2	2	1.5	SM-CL		FAT CLAY WITH SAND, (SM-CL) 30% sand, 70% fines UHG-CL-SM	UHG Clay	6" Borehole
							30.0 158.3		
							No Recovery		
							31.7 156.6		
			1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
		9	1	2			32.8 155.5		
			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
		12	1	3					
			1	3					
		19	1	3					
35			1	3					
		15	1	3					
			1	3					
		9.6	1	3					
			1	3					
		15	1	3					
			1	3			38.3 150.0		
		16	1	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
			1	2					
40		9.1	1	2					

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BORING ID: SL 500N 420E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/21/16 **COMPLETED** 11/21/16
GROUND ELEVATION 188.278 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252150.075 ft **EASTING** 2658756.963 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 190.278 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	10	1	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A *(continued)*	Upper Hawthorn	Cement-Grout
		9.2	1	2					
		10	1	2					
		17	1	2					
			1	2.5			43.8		
		16	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
45			1	2.5					
		12	1	2.5					
			1	2.5					
		13	1	2.5					
			1	2.5					
		11	1	2.5					
			1	2.5			48.0		
		14	1	1.5	ML		SANDY SILT, CLAYEY, (ML) 20% sand, 80% fines UHG-ML-B		
			1	2.5			48.7 — 139.6		
		10	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		Fine Sand
50			1						
		2.1	1	2.5					Bentonite
			1	2.5					
		2.2	1	2.5					
			1	2.5					
		3.8	1	2.5					Filter Sand
			1	2.5					
		9.8	1	2.5					
			1	2.5					
		12	1	2.5					Bentonite
55			4	2.5					
		187	2	2.5					
			1	2.5					10 ft Screen, 20 slot, SS
		80	2	2.5					
			1	2.5					
		40	2	2.5					
			1	2.5					
		203	4	2.5					
			1	2.5					
		114	2	2.5					
60									

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BORING ID: SL 500N 420E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **GROUND ELEVATION** 188.278 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252150.075 ft **EASTING** 2658756.963 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 190.278 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	60	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			2	2.5					
			1	2.5					
		51	2	2.5					
			1	2.5					
		249	2	2.5					
			4	2.5					
		203	2	2.5					
			4	2.5					
		46	2	2.5					
65			1	2.5					
		71	4	2.5					
			1	2.5					
		36	2	2.5					
			1	2.5					
		31	2	2.5			67.8 — 120.5		
			1	2	SM-CL		LEAN CLAY WITH SAND, SILTY, (SM-CL) 20% sand, 80% fines MHG-CL-SM	MHG Clay	
		27	1	2			68.5 — 119.8		
			1	0	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
70		24	1	0			70.0 — 118.3		

Bottom of Screen at 67.1 ft bgs.

Bentonite

Bottom of borehole at 70.0 feet.

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Tetra Tech
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Telephone: (303) 447-1823

BORING ID: SL 540N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 186.406 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252187.031 ft **EASTING** 2658518.927 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.406 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	Surficial Deposits	2" PVC Riser
5							5.0 / 181.4		6" Borehole
	100						Concrete and soil mixture		Cement Grout
							6.0 / 180.4		
		180	2	3	OH		ORGANIC SOIL, (OH) 40% sand, 60% fines Organic soil		
			3	3			7.0 / 179.4		
		74	4	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			4	4					
		142	4	4	SP				
			4	4					
10		261	4	4			10.0 / 176.4		
			4				SILTY SAND, (SM) 80% sand, 20% fines SA-SM-B		
		170	4	3					Fine Sand
			4	3					
		172	4	3	SM				
			4	3					
		168	4	3					Bentonite
			4	3			13.2 / 173.2		
		357	4	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			4	4					
		120	4	4					
15	100		4	4					Filter Sand
		160	4	4					
			4	4					10 ft Screen, 20 slot SS
		100	4	4	SP				
			4	4					
		55	4	4					
			4	4					
		53	5	4					
			5	4					6" Borehole
20		45	5	4					

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BORING ID: SL 540N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.
DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 186.406 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"
DRILLING METHOD Rotasonic **NORTHING** 252187.031 ft **EASTING** 2658518.927 ft
LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.406 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		70	4	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A *(continued)*	Surficial Deposits	Fine Sand
			5	4					
			5	4					
		20	5	4					
			3	4			22.3 / 164.1		
		20	3	2	SM		SILTY SAND, (SM) 60% sand, 40% fines UHG-SM-C		
			3	2					
		20	3	2					
			3	2					
25		31	3	2			26.3 / 160.1		
			3						
		18	3	2					
			3	2					
		23	1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
			1	1					
		16	1	1			27.8 / 158.6		
			1	1	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM		
		13	1	1.5					
			2	1.5					
30		81	2	1.5			29.7 / 156.7		
			3.5	1.5	CL		LEAN CLAY, (CL) 100% fines UHG-CL		
		20	1	1					
			1	1					
		20	3	1			31.5 / 154.9		
			3	2	GM		SILTY GRAVEL, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
	100	240	3	2					
			3	2					
		176	4	3			33.5 / 152.9		
			2	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		Bentonite
35		48	2	3					
			2						
		8.1	1	3					
			1	3					
		9.7	1	3					
			1	3					4" Borehole
		9.4	1	3					
			1	3			38.0 / 148.4		
		12	1	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	3					
40		17	1	3					

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BORING ID: SL 540N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/17/16 **COMPLETED** 11/17/16 **GROUND ELEVATION** 186.406 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252187.031 ft **EASTING** 2658518.927 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.406 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	29	1	3			SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	Bentonite
			1	3					
		25	1	3					
			1	3					
		13.3	1	3	SM				
			1	3					
		20.3	1	3					
			1	3					4" Borehole
45		19	1	3			45.0 141.4		

Bottom of borehole at 45.0 feet.

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BORING ID: SL 540N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.533 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252189.742 ft **EASTING** 2658556.818 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger		
5							5.0 181.5		
		2.3	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		6" Borehole
			1	5			6.0 180.5		
		0	1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
	100		1	3.5					
		0	1	5					
			1	3.5					
		0	1	3.5					
			1	3.5					
10		0	1	3.5			10.0 176.5		
		10	1	5	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A	Surficial Deposits	
			1	5			11.5 175.0		
		11	1	5	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	5					
		14	1	5					
			1	5					
		9.8	1	5					
			1	5					
		11	1	5					
15			1	5					Cement-Grout
		13	1	5			15.6 170.9		
			1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		12	1	5					
			1	5					
		14	1	5			17.7 168.8		
			1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		20	1	3.5					
			1	3.5					
		21	1	3.5					
20									

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BORING ID: SL 540N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.533 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252189.742 ft **EASTING** 2658556.818 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	21	1	5	SM		20.2 SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C 166.3	Surficial Deposits	6" Borehole
			1	2.5					
			1	2.5					
				2.5					
		17	1	2.5					
			1	2.5					
		23	1	2.5					
			2	2.5					
		31	2	2.5					
			2	2.5					
		39	5	2.5					
25			5	2.5			25.3 161.2		
		82	5	1	CH/SM		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (CH/SM) 20% sand, 80% fines UHG-CH/SM	UHG Clay	
			5	1					
		91	5	1					
		132	5	1.5					
		92	5	1.5			27.6 158.9		
			4	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL/SM		
		10	4	1.5					
			5	1.5					
		40	2	1.5					
30			2				30.0 156.5		Cement-Grout
			1	2	ML		SANDY SILT, (ML) 15% sand, 85% fines UHG-ML-A	Upper Hawthorn	
			1	2			30.9 155.6		
			1	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			1	2					
			1	2					
			1	2					
			1	2					
			1	2					
			1	2					
			1	2					
35			1	2			34.6 151.9		
			1	2	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2					
			1	2					
			1	2					
			1	2					
			1	2					
			1	2					
			1	2					
			1	2					
			1	2			38.9 147.6		
40			1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
							40.0 146.5		

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TETRA TECH
Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 540N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.533 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252189.742 ft **EASTING** 2658556.818 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	2	1	1.5	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D	Upper Hawthorn	4" Borehole
			1	3					
			1	3					
		2.8	1	3					
			1	3					
		4.7	1	3					
			1	3					
		5.3	1	3					
			1	3					
		9.4	1	3					
45			1	3					
		4.3	1	3					
			1	3					
		3.6	1	3					
			1	3					
		9	1	3					
		14	3	3					
			1	3					
			1	3					
50		5.2	1	3			50.0		
			1		SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		Cement-Grout
		14	1	2					
			1	2					
		35	3	2					
		69	3	2					
		42	3	2					
		320	3	2					
		195	3	2					
			3	2					
		196	3	2					
55			3	2					
		138	3	2					
			3	2					
		248	2	2			56.5		
			2	2.5	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		21	1	2.5					
			1	2.5					
		15	1	2.5					
			1	2.5					
60		12	1	2.5			130.0		

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BORING ID: SL 540N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.533 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252189.742 ft **EASTING** 2658556.818 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	13	1	2	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	Cement-Grout
			1	2.5					
				2.5					
			1	2.5					
		8.2	1	2.5					
			1	2.5					
		6.1	3	2.5					
		264	3	2.5					
		214	3	1			63.5 123.0		
		13	1	1	CL-SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SILTY, (CL-SM) 20% sand, 80% fines MHG-CL-SM	MHG Clay	
		6.5	1	1					
65			1	1					
		12.1	1	1					
			1	1					
		0.2	1	1					
			1	1			67.3 119.2		4" Borehole
		0.4	1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
		0.3	1	1					
		0.3	1	1					
			1	1					
70		0.3	1	1			70.0 116.5		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 540N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.811 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252187.854 ft **EASTING** 2658597.697 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.811 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									2" PVC Riser
							No core, hand auger		
5							5.0 177.8		2" SS Riser (threaded)
		0	1	4			POORLY GRADED SAND, (SP) 80% sand, 20% fines		Cement-Grout
			1	4			SA-SP-A		
		0	1	4	SP				
			1	4					
	100	0	1	4					
			1	4			8.0 174.8		6" Borehole
		0	1	5			POORLY GRADED SAND, (SP) 88% sand, 12% fines		
			1	5	SP		SA-SP-B		
10		0	1	5			10.0 172.8		
							No Recovery		
							11.0 171.8		
		2.1	1	5			POORLY GRADED SAND, (SP) 88% sand, 12% fines	Surficial Deposits	
			1	5			SA-SP-B		
		2	1	5					
			2	5					
		2.4	2	5					
			2	5					
		10	2	5					
15			2	5					
	90	15	2	5	SP				
			2	5					
		8	2	5					
			2	5					
		7	1	5					
			1	5					
		4	1	5					
			1	5					
20		4	1	5					

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DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252187.854 ft **EASTING** 2658597.697 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.811 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		75	4	5	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-B *(continued)*		
			4	5			21.0 — 161.8		
		72	4		SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	1.5			22.0 — 160.8		Cement-Grout
		47	1	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL-SM	UHG Clay	
			1	1.5			23.4 — 159.4		
		16	1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH		
			1	1			24.3 — 158.5		
25		37	3	1	SM		SILTY SAND, (SM) 65% sand, 35% fines UHG-SM-A		
			3	2			25.2 — 157.6		
		52	3	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL-SM		Fine Sand
			2	1.5			26.4 — 156.4		
		106	2	1.5	SM		SILTY SAND, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		Bentonite
			2	2					
	100	67	2	5					
			2	2					
			2	2			28.5 — 154.3		
		207	2	2	GM		SILTY GRAVEL, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		Filter Sand
			1	2					
30		94	2	2					
			4	2					
		370	4	2			30.5 — 152.3		
			5	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B	Upper Hawthorn	
		368	5	3					
			5	3					
		430	5	3					
			5	3					
		433	5	33					
			5	3					
35		343	5	3					10 ft Screen, 20 slot, SS
			5						
		190	5	3					
			1	3					
		28	1	3					
			1	3					
		26	1	3					
			1	3			38.0 — 144.8		
		22	1	2	SM		SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2			39.0 — 143.8		
		21	1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
40									

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CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/18/16 **COMPLETED** 11/18/16
GROUND ELEVATION 182.811 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252187.854 ft **EASTING** 2658597.697 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 184.811 (ft amsl) **Stickup** 2 ft
NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	20	1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B *(continued)*	Upper Hawthorn	4" Borehole
			1	3			41.0 141.8		
		23	1	2.5			SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	2.5					
		16	1	2.5					
			1	2.5	SM				
		19	1	2.5					
			1	2.5					Bentonite
45		13	1	2.5			45.0 137.8		

Bottom of borehole at 45.0 feet.

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BORING ID: SL 580N 180E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 11/1/16 **COMPLETED** 11/1/16
GROUND ELEVATION 186.379 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252237.476 ft **EASTING** 2658521.084 ft
LOGGED BY M. Isaacson **CHECKED BY**
TOC Elevation 188.379 (ft amsl) **Stickup** 2 ft
NOTES Borehole abandoned with grout, well offset 4 ft North from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0		1.2		2			Concrete and soil mix	Surficial Deposits	2" PVC Riser
			1				1.5 184.9		
		1.5		2			SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		2" SS Riser (threaded)
			1	2.5	SM				
		4.2							
			1	2.5			3.0 183.4		
							No Recovery		
5	30								6" Borehole
									Cement-Grout
10							10.0 176.4		
		271	4	2.5			SILTY SAND, (SM) 75% sand, 225% fines SA-SM-B		Fine Sand
			4	2.5					
		197	4	2.5	SM				
			4	2.5					
		86	4	2.5					Bentonite
			4	2.5			12.9 173.5		
		92	3	3			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			3	3					
		51	3	3					
15	100		3	3					
		60	3	3					
			3	3					
		105	3	3	SP				
			3	3					
		76	3	3					
			3	3					Filter Sand
		83	3	3					
			4	3					
20		52	4	3					

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BORING ID: SL 580N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/1/16 **COMPLETED** 11/1/16 **GROUND ELEVATION** 186.379 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252237.476 ft **EASTING** 2658521.084 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 188.379 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft North from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		73	4	3	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A *(continued)*	Surficial Deposits	10 ft screen, 20 slot, SS
			4	3					
			4	3					
		15	4	2.5			21.8 164.6		
			2	2.5	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-C		
		36	2	2.5					
			2	2.5					
		15	2	2.5					
			2	2.5					
		45	2	2.5					
25	100		2	3					
				2.5					
		40	2	1.5			25.7 160.7		
			2	1.5	CH		FAT CLAY, (CH) 30% sand, 70% fines UHG-CH	UHG Clay	
		5.3	2	1.5					
			2	2			27.0 159.4		Bottom of Screen at 26.6 ft bgs.
		4.4	2	2			SILTY SAND, (SM) 90% sand, 10% fines UHG-SM-B		
			2	2					
		16	2	2					
			2	2					
		59	4	2					
30			4						
		40	4	2.5					
			2	2.5	SM				
		5.6	2	2.5					
			2	2.5					
		4.4	2	2.5					
			2	2.5					
		2.2	2	2.5					
			2	2.5					
		4.2	2	2.5					
35	100		2	2			35.1 151.3	Upper Hawthorn	
		8.6	2	2			SILTY SAND, (SM) 75% sand, 25% fines UHG-SM-D		
			2	2					
		11	2	2					
			2	2					
		17	2	2	SM				
			2	2					
		15	2	2					
			2	2					
40		6.5	2	2					

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BORING ID: SL 580N 180E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/1/16 **COMPLETED** 11/1/16 **GROUND ELEVATION** 186.379 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252237.476 ft **EASTING** 2658521.084 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 188.379 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft North from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40			2				SILTY SAND, (SM) 75% sand, 25% fines UHG-SM-D *(continued)*		
		1.3	2	2.5					
			2	2.5					
		0	1	2.5					
			1	2.5					
		7.2	1	2.5					
		1.7	1	2.5					
			1	2.5					
			1	2.5					
		3.4	1	2.5					
45	100		1	2					
		4.9	1	2.5					
				2.5					
			1	2.5					
		3.1	1	2.5					
			1	2.5					
		17	1	2.5					
			1	2.5					
		13	1	2.5					
			1	2.5					
		4	1	2.5					
50			1		SM			Upper Hawthorn	
		7	1	2.5					
			1	2.5					
		6.5	1	2.5					
			1	2.5					
		13	1	2.5					
			1	2.5					
		9.1	1	2.5					
			1	2.5					
		32	1	2.5					
55	100		1	2.5					
		18	1	2.5					
			1	2.5					
		11	1	2.5					
			1	2.5					
		19	1	2.5					
			1	2.5					
		10	1	2.5					
			1	2.5					
		6	1	2.5					
60									

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DATE STARTED 11/1/16 **COMPLETED** 11/1/16 **GROUND ELEVATION** 186.379 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252237.476 ft **EASTING** 2658521.084 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 188.379 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 4 ft North from borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60			1						
		7.7	1	2.5			SILTY SAND, (SM) 75% sand, 25% fines UHG-SM-D *(continued)*		
			1	2.5					
		5	1	2.5					
			1	2.5					
	100	6.2	1	2.5	SM			Upper Hawthorn	
			1	2.5					
		5.1	1	2.5					
			1	2.5					
65		5.5	1	2.5			65.0 121.4		
			1				INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL) 20% sand, 80% fines MHG-CL-SM		
		1.7	1	2.5					
			1	2.5					
		1.3	1	2.5	CL				
			1	2.5					
		1.3	1	1.5			67.6 118.8		
			1	1.5			FAT CLAY, (CH) 100% fines MHG-CH		
	100	1.8	1	2.5				MHG Clay	
			1	1.5					
		0.1	1	1.5					
70			1	1.5	CH				
		0.1	1	1.5					
			1	1.5					
		0	1	1.5			72.0 114.4		

Bottom of borehole at 72.0 feet.

ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:26 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ

TETRA TECH
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Telephone: (303) 447-1823

BORING ID: SL 580N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/14/16 **COMPLETED** 11/14/16 **GROUND ELEVATION** 182.828 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252230 ft **EASTING** 2658597.197 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.828 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									2" PVC Riser
							No core, hand auger		
5							5.0 177.8		2" SS Riser (threaded)
		0	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	Surficial Deposits	
			1	5					
		0	1	5					
			1	5			7.5 175.3		
	100	0	1	5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			1	5					
		0	1	3.5			9.0 173.8		
			1	3.5	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B, bands of dark staining in core		
10		0.6	1	3.5			10.0 172.8		6" Borehole
			1				SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
		0	1	3.5					
			1	3.5					
		0	1	3.5	SM				
			1	3.5					
		3.3	1	3.5					
			1	3.5			13.0 169.8		
		15	1	3.5			SILTY SAND, (SM) 80% sand, 20% fines SA-SMB		
			1	3.5					
		25	1	3.5	SM				
15			1	3.5					Cement-Grout
		33	2	3.5					
			1	2.5			16.0 166.8		
		52	2	2.5			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			1	2.5					
		47	4	2.5					
			4	2.5	SM				
		72	4	2.5					
			4	2.5					
20		47	4	2.5					

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BORING ID: SL 580N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/14/16 **COMPLETED** 11/14/16 **GROUND ELEVATION** 182.828 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252230 ft **EASTING** 2658597.197 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.828 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	19	4	3.5	CH		20.2 / 162.6 FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		13	2	1					
			2	1					
			2	1					
			2	1			22.3 / 160.5		
		16	3	1	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM		
			3	1.5					
		26	3	2					
			3	2					
25		280	4	1.5			25.0 / 157.8		
			4	2	CL		LEAN CLAY, SILTY, (CL) 100% fines UHG-CL		Fine Sand
		122	4	1.5			26.0 / 156.8		
			4	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SANDY, (SM-CL) 30% sand, 70% fines UHG-CL-SM		Bentonite
		162	4	1					
			4	1					
		105	3	2			28.0 / 154.8		
			3	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 40% gravel, 30% sand, 30% fines UHG-GM		
		72	3	2					
			3	2					
30		100	3	2			30.0 / 152.8		
			1		ML		30.5 / 152.3 SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A	Upper Hawthorn	
		32	5	2	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			5	2					
		160	5	2					Filter Sand
			5	2			32.2 / 150.6		
		200	5	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
			4	1.5					
		48	2	1.5					
			1	1.5					
		26	1	1.5			34.5 / 148.3		
35			1	1.5	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
		25	1	1.5					
			1	1.5			36.0 / 146.8		
					SM		36.5 / 146.3 SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		10 ft screen, 20 slot, SS
		21	1	2	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			1	2					
		55	2	2					
			1	2					6" Borehole
		15	1	2					
			1	2					Bottom of Screen at 39.8 ft bgs.
40		20	1	2			40.0 / 142.8		

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BORING ID: SL 580N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/14/16 **COMPLETED** 11/14/16 **GROUND ELEVATION** 182.828 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252230 ft **EASTING** 2658597.197 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.828 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	17	1	2			SILTY SAND, CLAYEY, (SM) 70% sand, 30% fines UHG-SM-D		6/20 Filter Sand
			1	2					
			1	2.5					
		14	1	2.5					
			1	2.5					
		18	1	2					
			1	2					
		14	1	2					
			1	2					
		19	1	2					
45			1	2	SM				Bentonite
		18	1	2					
			1	2					
		16	1	2					
			1	2					6" Borehole
		21	1	2					
			1	2					
		19	1	2					
			1	1.5					
50		12	1	1.5			50.0		
			1				SANDY SILT, (ML) 40% sand, 60% fines UHG-ML-B	Upper Hawthorn	
		1	1	1.5					
			1	1.5					
		4	1	1.5					
			1	1.5					
		8	1	1.5					
			1	1.5					
		9	1	1.5					
			1	1.5					
		6	1	1.5	ML				
55			1	1.5					4" borehole
		2	1	1.5					
			1	1.5					
		3	1	1.5					
			1	1.5					
	100	1	1	1.5					
			1	1.5					
		0	1	1.5			58.5		
			1	1			LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
60		1	1	1	CL		124.3		

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BORING ID: SL 580N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/14/16 **COMPLETED** 11/14/16 **GROUND ELEVATION** 182.828 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252230 ft **EASTING** 2658597.197 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** 184.828 (ft amsl) **Stickup** 2 ft

NOTES Well completed in borehole

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60			1	1			LEAN CLAY, SILTY, (CL) 100% fines MHG-CL *(continued)*	MHG Clay	
		0	1	1					
			1	1					
		2	1	1					
			1	1	CL				
		0	1	1					
			1	1					
		0	1	1					
			1	1			64.0 118.8		
65		0	1	1	CH		FAT CLAY, (CH) 100% fines MHG-CH 65.0 117.8		

Bottom of borehole at 65.0 feet.

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BORING ID: SL 620N 160E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.148 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252273.607 ft **EASTING** 2658495.987 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	No Core	Cement-Grout
5							5.0 177.1		
			1				5.5 ORGANIC SOIL WITH SAND No recovery 176.6	Surficial Deposits	
		0.1	1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			1	3					
		0.3	1	3					
			1	3					
		0.3	1	3					
			1	3			8.0 174.1		
			1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
		0.3	1	4					
			1	4					
		1.4	1	4					
10			1	4					
		0.7	1	4					
			1	4					
			1	4					
		0.7	1	4					
			1	4					
	100	0.8	1	4					
			1	4					
		0.9	1	4					
			1	4					
			1	4					
15			1	4			15.0 167.1		4" Borehole
			1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0.7	1	5					
			1	5					
		0.9	1	5					
			1	5					
		3.1	1	5					
			1	5					
		6.1	1	5					
			1	5					
		2.4	1	5					
20			1	5			20.0 162.1		

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BORING ID: SL 620N 160E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.148 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252273.607 ft **EASTING** 2658495.987 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		1.2	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5					
		8.1	1	5					
			1	5					
		11	1	5			22.5 159.6		
			1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
			1	1					
		20	1	1			23.7 158.4		
			1	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM		
		23	1	1.5			24.5 157.6		
25			1	2	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		Cement-Grout
			1	2					
		73	2	2					
			1	2					
		52	2	2					
			1	2					
		42	2	2					
			1	2					
		38	2	2					
			1	2					
30		25	1	2					
	100		1	5					
		25	1	2					
			1	2					
		25	1	2					
			1	2			32.0 150.1		
			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B	Upper Hawthorn	
		11	1	3					
			1	3					
		12	1	3					
			1	3					
		11	1	3					
35			1	3			35.0 147.1		
			1	1.5	ML		SANDY SILT, (ML) 10% sand, 90% fines UHG-ML-B		4" Borehole
		14	1	1.5					
			1	1.5					
		13	1	1.5					
			1	1.5					
		15	1	1.5					
			1	1.5			38.0 144.1		
			1	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		13	1	3					
			1	3					
		1	1	3					
40							40.0 142.1		

Bottom of borehole at 40.0 feet.

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BORING ID: SL 620N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.483 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD RotaSonic **NORTHING** 252255.685 ft **EASTING** 2658555.667 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.483 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 2.5 ft South from borehole. n/a = PID readingnot available due to broken instrument

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									2" PVC Riser
							No core, hand auger		
5							5.0 181.5		2" SS Riser (threaded)
		25	1	4	SM		SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	Surficial Deposits	
			1	4			6.0 180.5		
			1	4	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		21	1	4					
			1	4					
	100	18	1	4					
			1	4					
		14	1	4					
			1	4					
10		5.2	1	4					6" Borehole
		n/a	1						
			1	4					
			1	4			11.3 175.2		
			1	4	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	4					
			1	4					
			1	4					
			1	4					
			1	4					
			1	4					
15		n/a	1	4					Cement-Grout
			1	4					
			1	4			16.3 170.2		
			1	3			SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			1	3	SM				
			1	5			17.5 169.0		
			1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5	SP				
			1	3			19.0 167.5		
20			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		

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BORING ID: SL 620N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.483 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD RotaSonic **NORTHING** 252255.685 ft **EASTING** 2658555.667 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.483 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 2.5 ft South from borehole. n/a = PID readingnot available due to broken instrument

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20	100	n/a	1	4	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B *(continued)*	Surficial Deposits	
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	2			23.4	163.1	
			3	2	SM		SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C	UHG Clay	
			3	2					
25		n/a	3	2			25.5	161.0	
			3	2	SP		25.7 POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	160.8	
			3	3			SILTY SAND, (SM) 60% sand, 40% fines SA-SM-C		
			3	3					
			3	3	SM				
			3	3					
			3	3					
			3	3					
			3	3			29.6	156.9	
30			4	1.5	CL/SM		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (CL/SM) 20% sand, 80% fines UHG-CL-SM		
		n/a	3				30.3	156.2	
			3	1.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		Bentonite
			3	2			31.0	155.5	
			3	2	ML		SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
			3	2			32.0	154.5	
			4	2			SILTY SAND WITH GRAVEL, (SM) 55% sand, 35% fines UHG-SM-C	Upper Hawthorn	
			4	2	SM				
			5	2					
			5	2			34.0	152.5	
			5	2			SANDY SILT, CLAYEY, (ML) 35% sand, 65% fines UHG-ML-A		
35		n/a	5	2					Filter Sand
			5	2					
			5	2	ML				10 ft screen, 20 slot, SS
			5	2					
			5	2					
			5	2					
			5	2			37.9	148.6	
			3	1.5			SANDY SILT, CLAYEY, (ML) 15% sand, 85% fines UHG-ML-B		
			3	1.5					
			3	1.5	ML				
40			3	1.5					

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ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:27 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ

TETRA TECH
Tetra Tech
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Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 620N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.483 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD RotaSonic **NORTHING** 252255.685 ft **EASTING** 2658555.667 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.483 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 2.5 ft South from borehole. n/a = PID readingnot available due to broken instrument

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40	100	n/a	3	1.5	ML		40.5 146.0	Upper Hawthorn	6" Borehole
			3	2			SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
			3	2	GM				
			3	2			41.8 144.7		
			3	2			SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			3	2	SM				
			3	2			43.2 143.3		
			3	3			SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	3					
			1	3					
45		n/a	1	3					Bottom of Screen at 44.9 ft bgs.
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
50			1	3					
		n/a	1						
			1	3					
			1	3					
			1	3	SM				
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
55		n/a	1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
			1	3					
60			1	3					

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BORING ID: SL 620N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/7/16 **COMPLETED** 11/7/16 **GROUND ELEVATION** 186.483 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD RotaSonic **NORTHING** 252255.685 ft **EASTING** 2658555.667 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** 188.483 (ft amsl) **Stickup** 2 ft

NOTES Borehole abandoned with grout, well offset 2.5 ft South from borehole. n/a = PID readingnot available due to broken instrument

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60	100	n/a	1	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D *(continued)*	Upper Hawthorn	
			1	3					
			1	3					
			1	1.5			61.5 — 125.0		
			1	1.5	ML		SANDY SILT, CLAYEY, (ML) 30% sand, 70% fines UHG-ML-B		
			1	3			62.5 — 124.0		
			1	3	SM		SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
			1	3					
			1	3					
			1	3					
			1	2			64.9 — 121.6		
65		n/a	1	2	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines MHG-SM-CL		
			1	1.5					
			1	1.5					
			1	1.5					
			1	1					
			1	1			67.8 — 118.7		
			1	1	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL	MHG Clay	
			1	1					
			1	1					
70			1	1			70.0 — 116.5		

Bottom of borehole at 70.0 feet.

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BORING ID: SL 620N 260E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.73 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252267.994 ft **EASTING** 2658592.926 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0									
							No core, hand auger		
5							5.0 177.7	No Core	
		0	1 1	4			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		Cement-Grout
			1	4					
		0	1	4					
			1	4					
	100	1.7	1	4					
			1	4					
		1.1	1	4					
			1	4					
		0	1	4					
10					SP				
			1						
		0	1	4					
			1	4					
		0	1	4					
			1	4					
		0	1	4					
			1	4					
		0	1	4					
			1	4					
		0.8	1	4					
15			1	4			15.0 167.7	Surficial Deposits	4" Borehole
	100		1	4			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
		0	1	5					
			1	5					
		0	1	5					
			1	5					
		0.4	1	5	SP				
			1	5					
		0	1	5					
			1	5					
		1.1	1	5					
20							20.0 162.7		

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.73 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252267.994 ft **EASTING** 2658592.926 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		2	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	Surficial Deposits	Cement-Grout
			1	5					
		1.1	1	5					
			1	3					
			1	3					
		3.4	1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
			1.5	3					
		20	1.5	3					
			1.5	3					
		146	2	1.5	SM-CL		FAT CLAY WITH SAND, (SM-CL) 100% fines UHG-CL/SM	UHG Clay	
25			1	1.5					
		35	2	1.5					
			1	1.5					
		163	2	1.5					
			1	2	SM		SILTY SAND, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C	Upper Hawthorn	
		37	2	2					
			1	2					
		28	1	2					
			1	2					
		21	1	2					
30	100		1	5					
		19	1	2					
			1	2					
		22	1	2					
			1	2					
		17	1	2					
			1	2					
		19	1	2					
			1	2					
		16	1	2					4" Borehole
35			1	2					
		21	1	2					
			1	2					
		14	1	2					
			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
		16	1	3					
			1	3					
		24	1	3					
			1	3					
40		14	1	3					

21.5 161.2
24.1 158.6
26.9 155.8
36.8 145.9
40.0 142.7

Bottom of borehole at 40.0 feet.

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Telephone: (303) 447-1823

BORING ID: SL 660N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.455 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252310.994 ft **EASTING** 2658555.459 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No core, hand auger	No Core	Cement-Grout
5							5.0 177.5		
		0	1	3			SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A	Surficial Deposits	
			1	3					
		0	1	3					
			1	3					
		0	1	3					
			1	3					
		0	1	3	SM				
			1	3					
10		0	1	3					
			1	3					
		0	1	3					
			1	3					
		0	1	3					
			1	5			12.0 170.5		
	100	0	1	5			POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B		
			1	5					
		0	1	5					
			1	5					
		0	1	5					
15			1	5					4" Borehole
		0	1	5					
			1	5	SP				
		1.8	1	5					
			1	5					
		1.6	1	5					
			1	5					
		1.3	1	5					
			1	5					
20		1.6	1	5			20.0 162.5		

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 11/18/16 **COMPLETED** 11/18/16 **GROUND ELEVATION** 182.455 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252310.994 ft **EASTING** 2658555.459 ft

LOGGED BY M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20		1.5	1	5	SP		POORLY GRADED SAND, (SP) 95% sand, 5% fines SA-SP-B	Surficial Deposits	Cement-Grout
			1	5			21.0 161.5		
			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines SA-SM-B		
		6	1	3					
			1	3					
		8.3	1	3					
			1	3			23.4 159.1		
		3.3	1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
			1	1			24.3 158.2		
		2.4	1	1.5	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CL/SM		
25			1	1.5					
		5.1	1	1.5					
			1	1.5			26.0 156.5		
		4.1	1	1.5	SM-CL		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (SM-CL) 20% sand, 80% fines UHG-CH/SM		
			1	1.5					
		7.3	1	1.5			27.5 155.0		
			1	2	GM		SILTY GRAVEL WITH SAND, (GM) 60% gravel, 20% sand, 20% fines UHG-GM	Upper Hawthorn	
			1	2			28.0 154.5		
		6.4	1	2	SM		SILTY SAND, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			1	2					
			1	2					
		9.3	1	2					
30			1	5					
	100	7.1	1	2					
			1	2					
		8.7	1	2					
			1	2					
		126	3	2					
			1	2					
		38	2	2					
			1	2					
		30	2	2					
35			1	2					4" Borehole
		23	1	2					
			1	2			36.0 146.5		
			1	1.5	ML		SILT, (ML) 10% sand, 90% fines UHG-ML-B		
		18	1	1.5					
			1	1.5					
		17	1	1.5					
			1	1.5			38.0 144.5		
			1	3	SM		SILTY SAND, (SM) 70% sand, 30% fines UHG-SM-B		
		14	1	3					
			1	3					
		15	1	3					
40							40.0 142.5		

Bottom of borehole at 40.0 feet.

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BORING ID: SL 700N 220E

CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization

PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 10/31/16 **COMPLETED** 10/31/16 **GROUND ELEVATION** 182.581 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252351.974 ft **EASTING** 2658556.869 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
0							No recovery, Hand Auger to 5 ft bgs	Surficial Deposits	Cement-Grout
5							5.0 177.6		
	0						No recovery		
10							10.0 172.6		
		37	2				SILTY SAND, (SM) 80% sand, 20% fines SA-SM-A		
			1	3.5					
		10	1	3.5					
			1	3.5					
			1	3.5					
		3.1	1	3.5					
			1	3.5	SM				
		2.5	1	3.5					
			1	3.5					
		0.9	1	3.5					
15			1	3.5					6" Borehole
	100		1	3.5					
		3.1	1	3.5					
			1	3.5			16.0 166.6		
		12	1	3.5			POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A		
			1	3.5					
		35	2	3.5					
			1	3.5	SP				
		4.8	1	3.5					
			1	3.5					
		5.8	1	3.5					
20									

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CLIENT Beazer East, Inc. **PROJECT NAME** South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.
DATE STARTED 10/31/16 **COMPLETED** 10/31/16 **GROUND ELEVATION** 182.581 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"
DRILLING METHOD Rotasonic **NORTHING** 252351.974 ft **EASTING** 2658556.869 ft
LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft
NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
20			1						
		11	1	3.5	SP		POORLY GRADED SAND, (SP) 88% sand, 12% fines SA-SP-A *(continued)*		
			1	3.5					
		0.9	1	3.5					
			1	3.5					
		1.6	1	3.5			22.5 160.1		
			1	1	CH		FAT CLAY, (CH) 100% fines UHG-CH	UHG Clay	
		1.6	1	1			23.4 159.2		
			1	2	SM-CL		INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (SM-CL) 30% sand, 70% fines UHG-CL-SM		
		2.2	1	2					
25	100		1	3.5					Cement-Grout
		1.6	1	2					
			1	2					
		2.5	1	2					
			1	2			27.0 155.6		
		2.4	1	2.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A		
			1	2.5					
		6.6	1	2.5			28.5 154.1		
			1	3	GM		SILTY GRAVEL WITH SAND, CLAYEY, (GM) 60% gravel, 20% sand, 20% fines UHG-GM		
		5.1	1	3					
30							30.0 152.6		6" Borehole
							No recovery		
							32.0 150.6		
		1.7	1	1.5	SM		SILTY SAND WITH GRAVEL, (SM) 10% gravel, 70% sand, 20% fines UHG-SM-A	Upper Hawthorn	
			1	1.5					
		2.2	1	1.5					
			1	1.5					
		3.9	1	1.5					
35	80		1	1.5					
		4.7	1	1.5					
			1	1.5					
		13	1	1.5					
			1	1.5			37.0 145.6		
		8.4	1	1.5	ML		SANDY SILT, GRAVELLY, (ML) 0% gravel, 35% sand, 65% fines UHG-ML-A		
			1	1.5					
		22	1	2.5					
			1	1.5					
		2.3	1	1.5					
40							40.0 142.6		

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PROJECT NUMBER 117-2201398 **PROJECT LOCATION** Gainesville, FL.

DATE STARTED 10/31/16 **COMPLETED** 10/31/16 **GROUND ELEVATION** 182.581 ft NAVD88

DRILLING CONTRACTOR Groundwater Protection **HOLE SIZE** nominal 6"

DRILLING METHOD Rotasonic **NORTHING** 252351.974 ft **EASTING** 2658556.869 ft

LOGGED BY J. Toth/ M. Isaacson **CHECKED BY** **TOC Elevation** (ft amsl) **Stickup** ft

NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
40			1						
		1	1	2.5			SILTY SAND WITH GRAVEL, GRAVELLY, (SM) 10% gravel, 55% sand, 35% fines UHG-SM-C		
			1	2.5					
		0.4	1	2.5					
			1	2.5					
		0.2	1	2.5					
			1	2.5					
		0.3	1	2.5					
			1	2.5	SM				
		0.2	1	2.5					
45			1	1.5					
	100			2.5					Cement-Grout
		0.2	1	2.5					
			1	2.5					
		0.1	1	2.5					
			1	2.5					
		0.1	1	2.5					
			1	2.5			48.1 134.5		
		0.1	1	1.5			INTERBEDDED FAT CLAY (CH) AND SILTY SAND (SM), (SM-CL) 2% gravel, 28% sand, 70% fines UHG-CL-SM		
			1	1.5	SM-CL				
50		0	1	1.5			50.0 132.6	Upper Hawthorn	
			1				SILTY SAND, (SM) 2% gravel, 68% sand, 30% fines UHG-SM-D		
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
55			1	1.5					
	100			2	SM				6" Borehole
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
			1	2					
		0	1	2					
60							60.0 122.6		

(Continued Next Page)

ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:27 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ

TETRA TECH
Tetra Tech
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
Telephone: (303) 447-1823

BORING ID: SL 700N 220E

CLIENT Beazer East, Inc.
PROJECT NAME South Lagoon Preliminary Investigation Characterization
PROJECT NUMBER 117-2201398
PROJECT LOCATION Gainesville, FL.
DATE STARTED 10/31/16 **COMPLETED** 10/31/16
GROUND ELEVATION 182.581 ft NAVD88
DRILLING CONTRACTOR Groundwater Protection
HOLE SIZE nominal 6"
DRILLING METHOD Rotasonic
NORTHING 252351.974 ft **EASTING** 2658556.869 ft
LOGGED BY J. Toth/ M. Isaacson **CHECKED BY**
TOC Elevation (ft amsl) **Stickup** ft
NOTES

DEPTH (ft)	RECOVERY %	PID Reading	NAPL Extent	Relative Permeability	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Geologic Unit	WELL CONSTRUCTION DIAGRAM
60									
		0	1	2	SM-CL		INTERBEDDED LEAN CLAY (CL) AND SILTY SAND (SM), SILTY, (SM-CL) 15% sand, 85% fines MHG-CL-SM		4" Borehole
			1	2					
	100	0	1	2			61.8 120.8		
			1	1.5	CL		LEAN CLAY, SILTY, (CL) 100% fines MHG-CL		
		0	1	1.5			63.0 119.6		

Bottom of borehole at 63.0 feet.

ISGS WELL DESIGN - GAINESVILLE ISGS.GDT - 2/8/17 11:27 - T:\GAINESVILLE\ISGS\SOUTH LAGOON\BORING LOGS\SL GINT LOGS\FEB 2\SL BORING LOGS FINAL 02_01_2017.GPJ